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# **Dynamics and Diversity: How are Religious Minorities faring in the Labour Market in Bangladesh?**

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## **Abstract**

This paper examines the wage gap between the two main religious groups in Bangladesh, Muslims and Hindus, across the wage distribution, over the period 1999–2009, during which the country experienced both the rise of a more secular political group and stable and high economic growth following the economic liberalisation of the 1990s, with improvements in the labour market and a widening of career opportunities for the minority. Applying unconditional quantile regression models, the paper documents a significant wage advantage for Hindu male workers aged 15–65 across the wage distribution. The key driver of this reverse wage gap is the improvement in their educational qualifications. Migration, changes in the relevant legislation and economic reforms may also play a certain role. The paper also demonstrates that controlling for selection into employment does not eliminate this estimated Hindu wage advantage.

**JEL Classification Codes:** J15; J24; J31; J71

**Key words:** Hindu, Muslim, Reverse Wage Gaps, Discrimination, Bangladesh

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## **1. Introduction**

Bangladesh is a predominantly Muslim-populated state, but has both ethnic and religious minorities. In most instances, individuals in the former category also belong to the latter. Among the non-Muslims, Hindus form the most significant minority, both in terms of numbers and for political and historical reasons. According to the population census of 1991, Muslims comprised 88.3% of the population of Bangladesh, while Hindus constituted 10.5%. By 2011, these numbers had increased to 90.3% for Muslims, but decreased to 8.53% for Hindus (BBS 1993; 2012). These figures are alarming, as they suggest that the Hindu population in Bangladesh is declining. The constitution of Bangladesh safeguards equal rights and opportunities for all people, irrespective of race, caste, religion, gender or place of birth (article (1) of the 1972 Constitution of Bangladesh); however, the state's bias in the Constitution and its reluctance to address human rights violations and discrimination against minorities have led to a huge migration of the Hindu community to India and other places.

Proponents believe that the discrimination against the Hindu community in Bangladesh is both visible and hidden. Hindu minorities are often at the bottom of the social hierarchy, and therefore have the least political recourse. For instance, while Hindu representation in parliament in 1954 (pre-independence era) was nearly 25%, it later declined to less than 3% (Sarkar 2008). Also, religious beliefs and state security denote that Hindus are generally not appointed to the Defence and Foreign Services of Bangladesh, and their representation in administrative positions is nearly non-existent. Hindus' employment disadvantages are likely to generate larger wage penalties against the minority group. Ironically, although Hindu minorities fare less well than the majority Muslim population in the employment hierarchy of the Bangladesh economy, they seem to do just as well or even better in terms of educational attainments and training. This may be due in part to persecutions of Hindus over time that have made them feel insecure regarding nonhuman assets that can be expropriated easily (e.g., through the Vested Property Act), with this discrimination having encouraged them to favour more portable and inalienable investments, such as human capital. This hypothesis suggests that, all other things being equal, Hindus will invest relatively more in schooling and less in other assets;

however, this would lower the return to Hindus' human capital.<sup>2</sup> Therefore, an alternative explanation is that Hindus may learn more in school because of supplemental training received at home or in the Hindu community prior to or concurrent with schooling. Furthermore, macroeconomic shocks may be a driving factor behind this Hindu achievement in educational qualifications, for instance, the economic transition from plan to market during the 1990s may have led Hindu minorities to be prepared for the changes in the economy through different educational choices.

The relative success of Hindus in human capital acquisition (especially compared with Muslims) allows them to assimilate into the labour market; hence, it will probably help in reducing the wage gap relative to Muslims. Our aim in this paper is to test this hypothesis by examining the wage gap between Muslim and Hindu workers over the period 1999–2009, a time period during which the country experienced both the rise of a more secular political party and stable and high economic growth following the economic liberalisation of the 1990s, with improvements in the labour market and a widening of career opportunities for the minority. The mix of economic and political events and trends makes the period of our analysis interesting.

We analyse and decompose the Hindu–Muslim wage gap using a framework that integrates differences in human capital characteristics (the *endowment effect*) and labour market discrimination (the *discrimination effect*). The latter effect falls under the rubric of *minority status*, which asserts that disparities in earnings between the dominant group and the minority group could reflect extensive socio-historical differences, of which inequalities in the acquisition of human capital or training are only a part; hence, differences would persist even with parity of the other factors. Past research on the racial wage gap has generally identified this as *discrimination* (see references in Sandefur and Scott 1983).<sup>3</sup> However, social scientists have suggested that at least part of what is typically regarded as the effects of discrimination might be due to cultural differences between the minority group and the

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<sup>2</sup> For other ideas on this point, see the study by Chiswick (1983), who suggested that Jews have a cultural taste for schooling because of a fear that their nonhuman assets may be vulnerable to expropriation.

<sup>3</sup> Note also that particular care must be taken throughout the paper when interpreting the term discrimination, because it includes the effects of labour market discrimination, unobservable variables (for instance, motivation), and omitted variables. The latter effect might mean that if there is any sort of omitted variable that has a positive effect on wages, and Muslims are more highly endowed with this variable, then the results from the decomposition would overestimate discrimination. Alternatively, if some of the factors in the model are affected by discrimination themselves, then the analysis may well underestimate discrimination. For instance, if Hindus have less access to the types of schooling that the market deems more valuable, then the decomposition may well underestimate discrimination.

dominant group. However, Hindus in Bangladesh are native-born and share the same *culture* as Muslims; that is, they are usually characterised as *Bengali*. Thus, differences in labour market outcomes are not attributable to *Bengali culture*. However, Park (1949) and Blauner (1972) have suggested that the size of a minority group, the intensity of conflict and competition between the minority group will affect the level of discrimination experienced by the minority group. In that sense, differences between Muslim and Hindu labour market outcomes may persist even if Hindus adopt the majority culture, for instance, Hindus are by far the largest religious minority group in Bangladesh, meaning that Muslim–Hindu competition is probably more common than that between Muslims and other groups. This could lead to more discrimination against Hindus than against other religious groups. On the other hand, the reverse can also happen. In general, there are no specific affirmative action policies on the grounds of religion in Bangladesh; but changes in the relevant legislation along with reinstatement of the first constitution could have contributed to the removal of barriers between the dominant group and the minority group.

This paper contributes to the literature in three further respects. First, to the best of our knowledge, this is the first study to examine wage differentials by religion in Bangladesh. Although scholars have frequently noted large wage differentials between males and females in the Bangladesh labour market (Salway et al. 2003; Akter 2005; Hossain and Tisdell 2005; Kapsos 2008; Ahmed and Maitra 2010; 2015; Ahmed and McGillivray 2015), there has been virtually no such research by religion. Therefore, there is little hard evidence available to help policy makers in assisting minority groups. Second, recent evidence especially from developed countries has indicated that the wage gap between Muslims and non-Muslims varies over the wage distribution (Levanon and Raviv 2007; Longhi et al. 2013); however, the contribution of these studies was of limited value, since the findings derived from these studies did not account for a selection bias into employment. In this paper, we adjust for selection and perform decompositions both at the mean and at specific quantiles ( $\tau = 0.25, 0.50, 0.75$ ) of the wage distribution. We start by following the Oaxaca-Blinder-type decomposition approach, based on the newly-developed unconditional quantile regression models

(Firpo et al. 2009).<sup>4</sup> To address the issue of selection into employment, we use the approach as per Ahmed and Maitra (2015). The selection adjustment primarily entails using the repeated imputation method (Rubin 1987) to impute wages for non-participants in a given year based on their observable characteristics. We then decompose the wage gap between Muslims and Hindus into *endowment* and *discrimination* effects at the mean and quantiles of the imputed wage distributions, and assess the impact of selection into employment by comparing the estimates for the base sample with those obtained for a sample enlarged using wage imputation.<sup>5</sup>

Finally, we use a recent large-scale database, the Labour Force Survey (LFS) datasets for 1999, 2005 and 2009.<sup>6</sup> This dataset provides detailed information on individual wages and socio-economic and family characteristics by religion. However, despite its advantages, the dataset has been under-utilised. Notable uses of the LFS dataset are the studies by Ahmed and Maitra (2015) and Ahmed and McGillivray (2015); however, their analyses were restricted to identifying the wage differentials by gender, rather than quantifying them by religion.

In the next section, we discuss a brief history on political environment and economic transition in Bangladesh as well as empirical findings of previous literature. In Section 3, we discuss the estimation framework. Section 4 describes the relevant data and outlines the labour market characteristics and wages of Muslim and Hindu workers. Section 5 presents our empirical findings. Robustness checks and further analysis are presented in Section 6 and Section 7 concludes the paper.

## **2. Background and related literature**

### **2.1 Political environment**

Religious cleavage was the main source of political dynamics in the Indian sub-continent in the first half of the twentieth century. Historically, the relationship between the Muslim and Hindu

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<sup>4</sup> The advantage of the unconditional quantile regression relative to the traditional conditional quantile regression of Koenker and Bassett (1978) is that the estimated coefficients are explained as the impact of changes in the distribution of explanatory variables on the targeted quantiles of the unconditional marginal distribution of the dependent variable. Therefore, we can apply the Oaxaca-Blinder decomposition method to the estimation results obtained from the unconditional quantile regression directly.

<sup>5</sup> Recently, this has been the most common way of addressing selection out of work (see McHenry and McInerney 2014; Albrecht et al. 2015).

<sup>6</sup> We would like to have been able to use data for 2002 as well, but religious adherence was not included in the 2002 survey questionnaire. The most recent year of data available at the time of writing is 2009.

populations in this sub-continent has been rife with conflict and tension. The partition between India and Pakistan in 1947 came in the wake of large-scale Muslim-Hindu riots, while the partition of Pakistan in 1971 was accompanied by an ideological revolution in former East Pakistan (now Bangladesh), which upheld secularism, as against the Islamic ideology of Pakistan. The proponents indicate that Hindus from East Pakistan bore a disproportionate brunt of the Pakistani Army's repression: nearly 2.5 million Hindus were killed during the Bangladesh Liberation War in 1971.<sup>7</sup> Given the aftermath of Hindu genocide, the first constitution of Bangladesh declared secularism and the equality of all citizens irrespective of religious identity during the Awami League (henceforth AL) regime, which formed the first national government of Bangladesh in 1973, and has been considered to be the most secular and favourably disposed toward minority rights of Bangladesh's major political parties. However, the constitutional provision for secularism and rights of non-Muslims still remains controversial today. Hindu minorities in particular have been persecuted with state sanction, through the 1972 Enemy/Vested Property Acts, which permitted Hindu citizens' property to be seized with impunity. An estimated 30% of Bangladesh's Hindu population has been affected directly by this law,<sup>8</sup> which appears to be correlated with emigration to India. Moreover, Hindus have been taken to epitomise the *oppressors*, largely because the broader public opinion continues to conflate Hindus with India.

[Fig. 1 about here]

The AL party was overthrown in 1975 but emerged as the largest political party during the 1991 election, in which the Bangladesh Nationalist Party (henceforth BNP) formed the government second time since its birth in September, 1978. BNP and its Islamist Coalition Partners have ruled Bangladesh during 1991–1996. BNP and its allies lost to AL in 1996 election but came back to power in 2001 election with a two-thirds majority of seats in parliament (see Fig. 1). The constitutional provision was abandoned during the BNP regime. Islam was declared to be the state religion, taking the country a significant step away from its secular foundation. The pro-Islamic BNP party and its

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<sup>7</sup> See Srinandan Vyas's article from 1994 on Hindu genocide in East Pakistan, found at [http://www.hindunet.org/hindu\\_history/modern/hindu\\_bangla.html](http://www.hindunet.org/hindu_history/modern/hindu_bangla.html).

<sup>8</sup> On the issue of Hinduism in Bangladesh, see [https://en.wikipedia.org/wiki/Hinduism\\_in\\_Bangladesh](https://en.wikipedia.org/wiki/Hinduism_in_Bangladesh) for more details.

allies was widely blamed for the human rights violations and discrimination against Hindus. The most vivid example, the Enemy/Vested Property Act, was repealed in 2001, but the government has not made any significant progress in the reinstatement of property to those from whom it was seized. In addition, riots on medium or smaller scales targeting Hindus have taken place periodically, to encourage them to emigrate in order to enable the seizure of their property.

The 2008 elections brought the Hindu-backed AL to power with 97% of seats in parliament, and the ruling party restored the first constitution of Bangladesh. The new government included three non-Muslims among the 38 ministerial positions (USCIRF 2010), and members of minority communities were also appointed to various other senior government and diplomatic positions. The government also declared that all laws that discriminate against the minority groups would be repealed, and that the ideas of equality of opportunity and equal rights for all citizens would be upheld.

## **2.2 Market transition**

Bangladesh is a notable example of country that has implemented strategies to introduce market-based economic reforms since the 1990s. The country has subsequently experienced stable and high economic growth: the average GDP annual growth rate was 6%, and poverty declined by about 17% during the decade 1999-2009 (Ahmed and McGillivray 2015). However, researchers have found large wage differentials between men and women during the process of rapid industrialisation despite the presence of anti-discrimination laws on hiring and in compensation (Ahmed and Maitra 2015; Ahmed and McGillivray 2015). These principles were reinforced under the new Labour Act 2006, which introduced several new pieces of legislation, such as penalty for payment or wages at a rate below the minimum wage rate, an increased minimum wage in the ready-made garments industry, among others. We have no evidence about the effects of transformation from plan to market on different religious groups. But since the barriers to entering specific occupations are removed, minority groups entering the labour force are likely to have a wider choice of jobs and training opportunities that result in improvements in economic well-being among different religious groups, such as higher earnings. However, there are not really any studies that focus on this issue in the context of Bangladesh.



### **2.3 Previous empirical research**

Wage differentials on the grounds of religion have been examined extensively in the context of the United States and Canada. The general consensus of this body of literature is that religion may play an important role in determining one's values, skills, endowments and goals, which in turn influence earnings and the rate of return to human capital. For instance, on the connection between religious values and the return to human capital, economic demographers have frequently asserted that Roman Catholics face additional psychic costs of birth control, which lowers the price of numbers of children, with the resulting larger family size tending to reduce the investment in each child and raise the marginal returns on such investments. Following the paper by Gockel (1969) for the United States, a number of studies have generally confirmed this hypothesis (Taubman 1975; Greeley 1976; Tomes 1984). Exceptions include the studies by Featherman (1971) and Roof (1981) for the United States and Meng and Sentence (1984) for Canada. For instance, Featherman (1971) and Roof (1981) found no significant differences, while Meng and Sentence (1984) found Jews to have substantially higher returns from schooling than either Protestants or Catholics. The latter findings have also been supported by most of the recent studies in the United States (Steen 1996; Burstein 2007; Chiswick and Huang 2008).

There are now a small number of studies on the wage gap between Muslims and non-Muslims. Lindley (2002) in the UK and Levanon and Raviv (2007) in Israel found that Muslims earn considerably less than non-Muslims. More recently, Khattab (2016) and Longhi et al. (2013) obtained similar results for the UK. They found that the wage penalty for Muslims seems to be driven by the types of jobs that people are employed in, given their educational qualifications. This argument has recently been confirmed by Brynin and Güveli (2012), who found the wage gap for Muslims in the UK to be explained in part by their concentration in low-paid occupations. However, Bhaumik and Chakrabarty (2007) derived slightly different results for India, concluding that Muslim wage earners earn less than their Hindu counterparts on average, but that the differences are due largely to differences in educational attainments.

### 3. Empirical framework

#### 3.1 Firpo et al. decomposition

We examine the wage gap between Muslim and Hindu employees at the specific quantiles of the wage distribution by performing a Oaxaca–Blinder decomposition based on unconditional quantile regression estimates.<sup>9</sup> Firpo et al. (2009) demonstrate that a corresponding Oaxaca–Blinder decomposition can be approximated for any distributional statistic (including quantiles). This method comprises two stages. In the first stage, distributional changes are divided into a wage structure effect (the *discrimination effect*) and a composition effect (the *endowment effect*). We decompose the wage gap into the two components mentioned previously by producing a counterfactual wage distribution,  $lnw_{ct}$ , which represents the distribution of wages that would be seen for Muslim workers in employment if they had the same distribution of characteristics as Hindus. The counterfactual distribution can be obtained by a re-weighting method (i.e., re-weight the distribution of workers in one group to control for the composition).<sup>10</sup> This re-weighting method allows the separation of composition and wage structure effects. Specifically, the predicted wage differential  $D_t(\tau)$  measured at quantile  $\tau$  in period  $t$  (1999, 2005 or 2009) can be decomposed as follows:<sup>11</sup>

$$\begin{aligned} D_t(\tau) &= lnw_{mt}(\tau) - lnw_{ht}(\tau) \\ &= \underbrace{[lnw_{mt}(\tau) - lnw_{ct}(\tau)]}_{\text{endowment effect}} + \underbrace{[lnw_{ct}(\tau) - lnw_{ht}(\tau)]}_{\text{discrimination effect}} \end{aligned} \quad (1)$$

The first component of Eq. (1) measures the wage gap due to differences in characteristics between Muslims ( $m$ ) and Hindus ( $h$ ) (the *endowment effect*), and the second component is the wage gap due to differences in returns to those characteristics (the *discrimination effect*). As was discussed above, the counterfactual wage  $lnw_{ct}(\tau)$  can be obtained by re-weighting. We define the re-weighting factor as:

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<sup>9</sup> A small but growing body of literature has adopted the unconditional quantile regression methodology for examining (and decomposing) gender differences in wages across the wage distribution. Two representative papers in the context of Bangladesh are those by Ahmed and Maitra (2015) and Ahmed and McGillivray (2015).

<sup>10</sup> The first step of the decomposition is semi-parametric, because it does not assume any functional form for the wage distribution.

<sup>11</sup> In estimating gender wage gaps, wage equations are estimated separately for men and women in order to allow for differing gender rewards by gender to a given set of productive characteristics or endowments. A similar argument may apply to the wage gap between Muslims and Hindus. A Chow test ( $F$ -test) rejects the null hypothesis that explanatory variables have equal impacts on the wage rates of Muslim and Hindu workers. The Chow test statistic in the pooled sample is 2.31 ( $p = 0.000$ ).

$$\psi_{it} = [(1 - p(X_{it}))/p(X_{it})] \times [p/(1 - p)], \quad i = 1, \dots, n; \quad t = 1999, 2005, 2009 \quad (2)$$

where  $p(X)$  is the probability of a Muslim being employed conditional on various sets of wage covariates  $X$ . We can estimate these probabilities using probit models in which the dependent variable is a dummy for Muslims;  $p$  denotes the proportion of Muslims over the full sample. This re-weighting factor then multiplies the observed wage distribution for Muslims to create a counterfactual wage distribution,  $lnw_{ct}(\tau)$ .

In the second stage, the two components of Eq. (1) are further divided into two stages. The first stage of the decomposition requires the estimation of the re-centred influence function (RIF) regressions for each distributional statistic, which is at the core of the method of Firpo et al. (2009). The authors show that one can obtain the average effects of explanatory variables on a distributional statistic (for instance, wage quantiles) by running a regression where the original response is replaced with the RIF of the statistics. This regression is known as the RIF regression. We run separate RIF regressions for  $lnw_m$ ,  $lnw_h$  and  $lnw_c$ . The second stage of the decomposition decomposes the wage gap into the explained (the *endowment effect*) and unexplained (the *discrimination effect*) components of each quantile, as is usually done with the Oaxaca–Blinder decomposition. Specifically, the wage differential at quantile  $\tau$  can be decomposed as follows:

$$D_t(\tau) = \left[ (\bar{X}_{mt}\hat{\beta}_{mt}(\tau) - \bar{X}_{ht}\hat{\beta}_{ct}(\tau)) + \hat{R}_E(\tau) \right] + \left[ \bar{X}'_{ht}(\hat{\beta}_{ct}(\tau) - \hat{\beta}_{ht}(\tau)) + \hat{R}_C(\tau) \right], \quad (3)$$

where  $\bar{X}_{jt}$  ( $j = m, h$ ) is a vector of the average characteristics of workers.<sup>12</sup> The first term  $(\bar{X}_{mt}\hat{\beta}_{mt}(\tau) - \bar{X}_{ht}\hat{\beta}_{ct}(\tau))$  represents the pure endowment effect, that is, the wage gap at the  $\tau^{\text{th}}$  quantile due to endowment differentials.<sup>13</sup> The second term  $(\hat{\beta}_{ct}(\tau) - \hat{\beta}_{ht}(\tau))$  measures Muslim–Hindu differences in returns to labour market characteristics. Thus,  $\bar{X}'_{ht}(\hat{\beta}_{ct}(\tau) - \hat{\beta}_{ht}(\tau))$  represents the wage gap at the  $\tau^{\text{th}}$  quantile due to the different returns (the *discrimination effect*). This is the wage difference that is due to the differential rewards for equal characteristics, and is interpreted as a

<sup>12</sup> The unconditional properties of the wage function can be obtained by averaging it over  $X$ .

<sup>13</sup> In our analysis, we present and discuss the results that correspond to the case where the wage rates for Muslims are the reference category. This assumption is reasonable in our context, as the majority of the workforce in Bangladesh consists of Muslims.

measure of the extent of actual discrimination in the labour market.  $\hat{R}_E$  and  $\hat{R}_C$  are the estimates of approximation errors corresponding to the *endowment effect* and the *discrimination effect*, which will appear in practice because of the first order approximations and the way in which the counterfactual wage distribution is constructed in the RIF regression functions.<sup>14</sup> In practice, the approximation errors may be estimated as follows:

$$\hat{R}_E(\tau) = \left[ \ln w_{mt}(\tau) - \ln w_{ct}(\tau) - (\bar{X}_{mt}\hat{\beta}_{mt}(\tau) - \bar{X}_{ht}\hat{\beta}_{ct}(\tau)) \right] \quad (4)$$

$$\hat{R}_C(\tau) = \left[ \ln w_{ct}(\tau) - \ln w_{ht}(\tau) - \bar{X}'_{ht}(\hat{\beta}_{ct}(\tau) - \hat{\beta}_{ht}(\tau)) \right] \quad (5)$$

## 4. The data

### 4.1 Data sources

We use data from the Labour Force Surveys conducted by the Bangladesh Bureau of Statistics (BBS) for 1999–2000 (henceforth LFS 1999), 2005–2006 (henceforth LFS 2005), and 2009 (henceforth LFS 2009).<sup>15</sup> These three cross-sectional surveys are nationally representative datasets that cover the whole of the country, disaggregated by urban and rural areas. Different households in both rural and urban areas across all regions of Bangladesh are surveyed each year. The households are selected via stratified random sampling.

The data from the LFS 1999, 2005 and 2009 contain detailed information concerning a range of individual (age, gender, marital status, educational attainment, employment status, hours worked, and wages earned) and household-level (household size and composition, religion, land holding, location, and asset ownership) characteristics. The 1999 sample of LFS was based on the 1991 nationwide population census (BBS 1993), while for the latter years the sample was based on the 2001 nationwide population census (BBS 2003). Hence, the surveys do not include people, who arrived in, or left Bangladesh before 1991.

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<sup>14</sup> As was discussed by Firpo et al. (2009), it is important to compute approximation errors in order to determine whether the linear model is well specified.

<sup>15</sup> The results of these surveys were published in 2002, 2008 and 2011 respectively, and are therefore cited in the references as BBS (2002; 2008; 2011)

## 4.2 Sample selection and variables

The estimating sample is restricted to male wage employees in order to avoid complications, related to modelling intra-family labour supply decisions. We choose individuals between 15 and 65 years old inclusively to ensure that we do not include people who are likely to be child labour or retired. The official retirement age in Bangladesh is 60 for males, although these retirement age restriction is enforced only in the public sector and a large proportion of men continue to work beyond the age of 60. We also exclude self-employed individuals. The main reason for dropping the self-employed is that the determinants of self-employed earnings differ from those of wages (Ahmed and McGillivray 2015), meaning that the analysis does not apply to this group.

[Table 1 about here]

The details of the selection are reported in Table 1. The remaining individuals are classified into three groups: those who are wage employees (full time and/or part-time), those who are unemployed and those who do not participate in an economic activity (non-participants). The wage employment increased for both Muslims and Hindus from 1999–2009, but the majority of those who worked for wages were Muslims. The non-participants and unemployed are also predominantly Muslims. There could be several possible reasons for not being employed. Ahmed and McGillivray (2015) noted that the role of ‘discouraged worker’ effects basically lead men to leave the labour force during 1999–2009; however, more research is needed to clarify such issue by religious groups.

The measure of earnings that we use is the (log) of hourly wages. Hourly wages are computed by dividing monthly wages by the total number of hours of work per month. The survey collected information concerning the usual number of hours of work per week, but not the number of weeks worked during a month. Therefore, the monthly hours of work are computed by multiplying the usual hours of work per week by 52/12. All nominal wages are converted to real values using the National Consumer Price Index, 1999 = 100.

The determinants of wages include a set of variables that affect productivity. These variables include inherent ability (unobserved, proxied by the individual's educational attainments),<sup>16</sup> age group, formal sector, part-time work, occupation,<sup>17</sup> industry, marital status, number of young children in the household,<sup>18</sup> and location and region of residence.<sup>19</sup> A full list of the variables included in the wage regression is provided in Appendix A (Table A.1).

[Fig. 2 about here]

[Fig. 3 about here]

### 4.3 Descriptive statistics

Sample averages, based on LFS data, reveal that the mean monthly wage for Muslims was higher than that of Hindu wage workers during 1999–2005 (Fig. 2). After that period, the advantage turned increasingly in favour of Hindu workers. These differences are statistically significant at 5% level. Fig. 3 shows that the wage difference between Muslim and Hindu workers is likely to be different in the upper and lower tails of the distribution, particularly in 2005 and 2009. The underpayment of Hindu workers is somewhat higher for low-earning workers and narrows significantly and even reversed as we progress to higher earnings in 2005. However, by 2009, there is a significant improvement of earnings for Hindu workers at both the bottom and top quantiles. Accordingly, it suggests that the wage gap between Muslim and Hindu workers has been reversing over time.

[Fig. 4 about here]

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<sup>16</sup> The theory of human capital argues that personal earnings are a positive function of educational attainment. We use five dummies to capture the highest level of educational attainment of the individual: primary education completed (Grade 5), secondary education completed (Grade 10/Secondary School Certificate), post-secondary education completed (Grade 12/Higher Secondary School Certificate), graduate (at least completed a Bachelor's degree) and technical education. The reference category includes those individuals with less than a primary education.

<sup>17</sup> We include six occupational category dummies: professional, administrative, clerical, service, sales, agriculture and production. The reference category is 'others'.

<sup>18</sup> It is often argued that the number of children in the household might capture any wage penalty that is associated with having children, due to both the reduced labour supply and the reduced commitment to the labour market, which reduces productivity.

<sup>19</sup> The region dummy variables control for spatial variation in prices, which are likely to be significant, with higher wages and prices in Dhaka (the capital for Bangladesh) than in other regions. The region dummy variables also control for region-specific differences in labour markets (such as unemployment rates), which might affect wages. Similarly, the regional dummies will control for the potential measurement issue that the quality and availability of education facilities differ markedly across regions, which may result in different levels of human capital accumulation in different regions. For instance, programs such as the Food for Education and School Feeding Program were implemented in many regions to improve basic education outcomes. Regional dummies control for the effect of such programs.

Fig. 4 shows the percentage of Muslim and Hindu wage earners by educational attainments. The percentage of Muslims and Hindu who completed grade 10 (i.e., secondary education) increased significantly between 1999 and 2009, although the change by 2009 was slightly higher for Hindu workers. On the other hand, the percentage of Muslim wage earners with a graduate degree was significantly lower than that for Hindu wage earners. This result is statistically significant at 5% level and barely changed over time. At the other end of the education spectrum, a higher percentage of Muslim wage earners than Hindu wage earners had a primary education or less.

[Table 2 about here]

Table 2 shows the percentage of Muslims and Hindus who worked in the week preceding each survey, categorised by occupational choices. Professional jobs mainly include scientists, engineers, and other technological occupations that require post-high school education. Managers or administrators are workers in administrative or managerial positions. These latter two categories are probably the most lucrative occupations in the economy. Significantly, the occupational distribution varies across religious groups during 1999–2009. Muslims are relatively more concentrated in professional and agricultural occupations than Hindu workers in 1999, while surprisingly Hindu minorities are more concentrated in managerial position than the majority Muslims over the same period but the difference is not statistically significant. By 2005, Hindu workers are highly concentrated in both professional and administrative positions relative to Muslims (though the latter finding is not statistically significant) and in administrative and sales positions in 2009. This result does not seem particularly surprising, as Hindus have experienced a greater access to post-secondary and tertiary education. In addition, jobs with lower educational requirements and lower skills (e.g., production-related jobs) tend to be dominated by Muslims during 1999–2009.

[Table 3 about here]

Table 3 presents distribution of Muslim and Hindu wage earners by major industries. The industry variable, which includes more than 12 different industries, has been grouped into three categories. Primary industry includes agriculture and fishing. Secondary industry includes manufacturing, electricity and construction, mining and quarrying, while tertiary industry includes other industry categories (see Table A.1). Muslim workers are relatively more concentrated in low-wage primary

industry in 1999 but moved to relatively better paid tertiary industry in 2005 and further moved to primary industry in 2009 (though not statistically significant). However, by 2005, Hindu wage earners dominated the primary industry but the difference is not statistically significant. Moreover, a much higher proportion of Hindu minorities, in comparison with the Muslims, are concentrated in tertiary industry in 2009 (though not statistically significant).

Averages of other selected explanatory variables are presented in Appendix B (Table B.1).

## **5. Results**

### **5.1 RIF unconditional quantile regression**

The RIF regression estimates for Muslim and Hindu workers for the three survey years are presented in Appendix C (Tables C1–C3). Panel A of each table presents estimates for Muslims, and panel B lists these estimates for Hindus, unadjusted for a sample selection bias. The most notable finding is that, with few exceptions, work experience (proxied by age) rewards Muslim workers more than Hindu workers across the wage distribution during 1999–2009. On the other hand, the returns to education beyond the post-secondary level appear to be modestly higher for Hindu workers both at the mean and at the lower quantiles of the wage distribution in both 1999 and 2005 whereas at the upper end of the distribution, Muslim workers dominated in both years. By 2009, this trend had been reversed. In particular, the returns were higher for Muslims who hold post-secondary and graduate degrees than their counterparts with no education at the lower quantiles of the wage distribution. In contrast, the earning advantage of a technical education was greater for Hindu workers, especially at the lower quantiles of the distribution in 1999 and 2005. A similar pattern is observed in 2009. Working in a formal sector had a positive and significant effect on wages for Muslim workers during 1999–2009. A similar pattern is observed for Hindu workers especially from 1999 to 2005. However, the earning advantage was always greater for Muslim workers across the wage distribution, especially from 2005 to 2009.

The impacts of the different levels of occupation on wages were roughly the same for Muslim and Hindu workers in 1999. A noticeable change was observed between 2005 and 2009, for instance, Muslim workers in professional and administrative jobs earned more than the reference group (i.e.,



Muslim workers in other occupations) at all quantiles in both 2005 and 2009. A similar effect is found for Hindus working in professional occupations at the 75<sup>th</sup> quantile in 2005 and at the mean and at the 75<sup>th</sup> quantile in 2009. Interestingly, the earning advantage was always greater for Muslim workers, especially at the lower quantiles in both types of occupations.

[Table 4 about here]

## 5.2 Firpo et al. decomposition

Table 4 presents the decomposition results both at the mean and at selected quantiles. The decomposition at the mean reveals that the wage difference between Muslim and Hindu workers in 1999 was 0.074 log points (or 7.6%).<sup>20</sup> The decomposition of this gap reveals that this was due entirely to labour market discrimination. After accounting for differences in endowments, the discrimination component was 0.190 log points, indicating that if Muslims and Hindus had obtained wages based on their productive characteristics, Muslims would have earned 21% higher than those of Hindus. The mean wage gap narrowed in favour of Hindus in both 2005 (−0.015 log points or −1.5%) and 2009 (−0.046 log points or −4.4%). Although this result is smaller in magnitude, it is broadly consistent with the findings from similar studies (for instance, see Bhaumik and Chakraborty 2007). This advantage is explained by their labour market characteristics over the period 2005–2009. The detailed decomposition in Table 4 shows that the *endowment effect* associated with educational qualifications (in both years) has contributed considerably to the wage advantage of Hindus. These findings however are not unique to Bangladesh, and they concur with those reported by Bhaumik and Chakraborty (2007) for India. Beginning in 2005, the advantage of Hindus with respect to educational qualifications is evident from the post-secondary level onwards; by 2009, most Hindu workers have graduate degrees and technical educations (Table 2). On the other hand, the effects of discrimination against Hindus remain positive and statistically significant though much smaller in magnitude in 2009. Our findings could be related to three important phenomena. First, the decline in discrimination could be related to ‘the wage structure effect’. For instance, Hindus with post-secondary and university education and working in professional occupations received relatively higher returns than

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<sup>20</sup> The percentage term is calculated as  $(\exp(x) - 1) \times 100$ , where  $x$  is ‘log-point’.

their Muslim counterparts in 2009 (see Table C.3 in Appendix C). Second, the process of economic liberalisation that has been going on in Bangladesh since the 1990s has meant that the labour market is more willing to accommodate workers with a higher education than those without such an education (this issue will be discussed further in sub section 6.4). Third, in addition to these structural changes in the labour market, reinstatement of the first constitution could also play an important role.

The rest of Table 4 decomposes the wage gap between Muslim and Hindu workers at the median, and at the 25<sup>th</sup> and 75<sup>th</sup> quantiles. In 1999, with the exception of the 75<sup>th</sup> quantile, the wage gap between Muslims and Hindus is positive and statistically significant, reaching 0.114 log points (or 12%) at the 25<sup>th</sup> quantile. However, the wage gap has reversed in favour of Hindu workers at selected quantiles during 2005–2009. We also note that the relative earnings advantage of Hindus is lower at the lower end of the distribution (–0.001 log points [–0.1%] at the 25<sup>th</sup> quantile) than at the upper end of the distribution in 2005 (–0.025 log points [–2.4%] at the 75<sup>th</sup> quantile). Interestingly, Levanon and Raviv (2007) found a similar result for Israel, with the wage advantage for Jews or Christians relative to Muslims being lower towards the lowest percentiles. The opposite is true for the 2009 sample (–0.090 log points [–8.6%] at the 25<sup>th</sup> quantile and –0.058 log points [–5.6%] at the 75<sup>th</sup> quantile).

The detailed decomposition reveals that the differences in endowments between 1999 and 2009 primarily favoured Hindu workers at the lower and upper ends of the wage distribution, which would have contributed significantly to the narrowing of the wage gap in favour of Hindus. The results clearly indicate that educational qualifications of Hindu workers have largely contributed to the reverse wage gap. Beginning in 2005, the advantages of Hindu workers with respect to educational qualifications are evident from the 25<sup>th</sup> quantile onward; by 2009, Hindu workers were favoured substantially in terms of educational qualifications, both at the 25<sup>th</sup> and 75<sup>th</sup> quantiles. The other notable finding is that the occupational distribution plays a bigger role for Muslim workers than their educational qualifications, suggesting that the sorts of jobs that Muslims end up in, given their qualifications, are more pertinent to their wage disadvantage than simply their average differences in qualifications (see also Longhi et al. 2009). For instance, while the differences in occupational distributions favour Muslims from the 25<sup>th</sup> quantile onward in 1999, at the 25<sup>th</sup> quantile in 2005, and from the 25<sup>th</sup> quantile onward in 2009, they favour Hindus at and above the 50<sup>th</sup> quantile in 2005.

On the other hand, the discrimination component had the opposite effect on the wage gap between Muslims and Hindus. It was actually positive and statistically significant (with a few exception) for both lower and upper income quantiles, which might have contributed to the increase in the wage gap in favour of Muslims. The results might reflect higher returns to work experience (proxied by age) and occupational choice for Muslims than for Hindus at the lower quantile and higher returns to educational qualifications for Muslims than for Hindus at the upper quantile (see Tables C.1-C.3), employer discrimination against the minority group, or a combination of the two. However, the *endowment effect* is in favour of Hindu workers and dominated in most of the quantiles. Therefore, the net effect across the wage distribution was a narrowing of the wage gap in favour of Hindus.

Finally, with the exception of a few cases, the magnitude of the approximation errors is generally large but statistically insignificant (the bootstrapped standard errors are computed but not shown). The large approximation errors are not uncommon at the mean or at other points of the wage distributions when applying the RIF regression (Ahmed and Maitra 2015). This result indicates that the RIF-based decompositions provided good approximations of the true wage differentials between Muslim and Hindu workers in our sample.

[Table 5 about here]

## 6. Robustness and further discussions

We conducted a number of robustness tests on the obtained results and shed some light on a few possible explanations of our results; including migration, politics, and economic transition. We discuss some of them in this section.

### 6.1 Selection effects

Wages are observed only for those who actually enter the labour force and choose to work as employees. As selection into employment is not random, we account for a possible selection bias by imputing a wage for those who are not employed or simply non-participants. This is similar to the most recent work on Bangladesh done by Ahmed and Maitra (2015),<sup>21</sup> and requires neither

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<sup>21</sup> Another way to address the selection problem would be to model the labour force participation decision explicitly and estimate a structural model of wage offers and participation decisions (Heckman 1979). However,

assumptions about the actual levels of missing wages, which are typically required in the matching approach, nor arbitrary exclusion restrictions, which are often involved in sample selection correction models.

When performing wage imputation for unemployed or non-participants, we rely on their observed characteristics; that is, we impute wages for unemployed and the non-participants by assigning them the observed wages of employed individuals with matching characteristics (Juhn 2003). This method has the advantages of using all of the information available concerning the characteristics of unemployed and the non-participants and taking into account uncertainty about the reason for the missing wage information.

The imputation is performed using Rubin's two-step repeated imputation technique (Rubin 1987). In the first step, we use the sample of employed workers to define a dummy variable  $I_{it}$  that is equal to 1 for an individual  $i$  in period  $t$  who is above the median of the observed wage distribution, and 0 otherwise. We then estimate a probit model for  $I_{it}$  on a vector of variables  $X_{it}$  that are available for wage employees, unemployed and non-participants. These variables include education, whether the individual is the head of the household, the numbers of children and adults aged 15 or older in the household, and the location and region of residence. Next, we obtain predicted probabilities of having a latent wage above the median, given characteristics  $X_{it}$ ,  $\hat{P}_{it} = Pr(I_{it}|X_{it})$ , where  $X_{it}$  is a vector that includes a Muslim dummy and various other characteristics, as outlined above.

In the second step, the predicted probabilities  $\hat{P}_{it}$  that were estimated in the first step are used as sampling weights for unemployed and the non-participants. That is, in each of the independent imputed samples, wage employees feature with their observed wages, and unemployed and the non-participants feature with wages above the median with probability  $\hat{P}_{it}$  and below the median with probability  $1 - \hat{P}_{it}$ , conditional on the observed characteristics. To implement this approach, we construct 20 independent imputed samples. The final estimates of the statistics of interest are obtained by averaging the estimates across the 20 rounds of imputation. Finally, we estimate and decompose the wage gap between Muslims and Hindus for the imputed sample both at the mean and at the

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the difficulty of exploiting and identifying a Heckman selection model in the unconditional quantile regression framework led us to consider this alternative approach.

specific quantiles. We assess the impact of selection into employment on the observed wage gap by comparing the estimates obtained using repeated imputation techniques.

It is difficult to predict a priori how correction for selection will affect the results. Ultimately, this effect depends on the wages that unemployed and the non-participants earned when they were (later) employed, on the observable characteristics of unemployed and the non-participants, and on the estimation methods. The results based on repeated imputation are summarised in Table 5.<sup>22</sup>

In 1999, the wage gap between Muslim and Hindu workers for the imputed wage distribution remained positive but smaller in magnitude, especially at the mean and at the 25<sup>th</sup> quantile, than the gap obtained for the base sample presented in Table 4. We note that the discrimination component is actually negative at the mean and at the 25<sup>th</sup> quantile, which might tend to reduce the wage gap between Muslims and Hindus. It might be possible that unemployed and non-participants, especially Hindu minorities, have higher levels of the factors that are expected to be correlated with higher wages (for instance, education). On the other hand, the discrimination component has opposite effects on the wage gap at and above the 50<sup>th</sup> quantile. This finding probably indicates that there were relatively more Muslims with wages above the median.

We note that correcting for sample selection leads to results for sample years 2005–2009 similar to those presented in Table 4. However, the wage gap between Muslims and Hindus for the imputed wage distribution is actually lower (with a few exceptions) than that obtained for the base sample (Table 4), especially in 2005. Therefore, the observed reverse wage gap tends to be overestimated if the wage equations ignore selection bias effects. The major reason behind this fact is that Hindu minorities benefitted from a decline in discrimination over the period. It is actually negative at selected quantiles and statistically significant at the 1% level. The (unreported) wage regression results suggest that higher returns to education among Hindus than among Muslims are a key driver of this effect. On the other hand, in 2009, repeated imputation generated smaller estimates of the reverse wage gap between Muslim and Hindu workers than obtained for the benchmark sample presented in Table 4. The major driving force behind this effect is the relative endowment advantage for Muslims,

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<sup>22</sup> The wage regression results based on the imputed sample are not reported, but these results are available from the authors upon request.

which might tend to reduce the Hindu wage advantage. This result hints at the fact that Muslims who were unemployed or who did not participate endowed with more productive characteristics (e.g., education) over the years.

[Table 6 about here]

## 6.2 Migration

Thousands of Bangladeshi Hindus are believed to have migrated to neighbouring India to escape communal disturbance since independence in 1971. Such outflows of the Hindu population into India and other countries may have contributed to the Hindu wage advantage over time. Evidence presented by Lucas (2005) suggests that emigration led to higher levels of employment for Bangladeshi nationals. However, the potential impact of this on the wage gap between Muslim and Hindu workers in Bangladesh is unknown. In the absence of any information on the *migration* status of the workers in the data set, there is not much that we can do to address this issue here. Our only way (however imperfect) to judge the importance of migration for the analysis in this paper would be to look at a sample of the workers with the lowest probability of emigration, so that what we observe is *all* individuals, not simply those who did not migrate.<sup>23</sup>

Certain regions of Bangladesh can be characterised as *low migration* or *high migration* regions. According to the Population Census of 1991 and 2001, the *high migration* regions tend to be in the centre and south-east of the country (BBS 1993; 2003). For instance, the growth rates for the Hindu population in this region varied between -5.77 and 2.27% (Table D.1 in Appendix D). Similarly, there are *low migration* regions in the south, west, and north-west of the country; with growth rates for the Hindu population varied from 5.11 to 9.55%.

The sample that was used in this paper was divided into *high migration* and *low migration* regions. The decomposition analysis was done separately for the Muslim and Hindu workers in the *low migration* regions. The *low migration* regions have a higher proportion of Hindu wage earners over the period 1999–2009 relative to the national average, for instance, in 1999, about 60% of the Hindu wage workers were in *low migration regions*; the equivalent numbers for 2005 and 2009 were 62% and 67%, respectively (Table D.1 in Appendix D). The corresponding figures for Muslim wage

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<sup>23</sup> Our approach is closely related to that of Popli (2013).

workers were 47% in 1999, 57% in 2005 and 55% in 2009. Muslims have an advantage over their Hindu counterparts in terms of earnings in the *low migration regions* during 1999–2005 (Table 6). Our data suggests that while the differences in labour market endowments are in favour of Hindu workers, the discrimination component is positive and dominated over the period 1999–2005, which might tend to increase the wage gap between Muslim and Hindu workers. By 2009, the wage gap has been reversed across the wage distribution and the gap is now larger. The key driver is that the effect of discrimination against Hindu workers disappeared completely, indicating Muslims and Hindus have a fairly rigid wage structures. These findings perhaps imply that employers’ personal tastes have gradually changed toward equal treatment of different groups brought by a new institutional setting, reinstatement of the first Constitution that was associated with a platform of respect for all citizens irrespective of religious identity, or the combination of the two. However, as emigration has increased a lot since independence in 1971 we cannot exclude a certain bias to the estimates for the earlier periods.

[Fig. 5 about here]

### 6.3 Politics

Our basic empirical specification does not include a satisfactory variable that capture the ambient political environment, which might influence Muslim–Hindu wage differentials. In particular, the period of our study coincides with the rise and the fall of the AL in Bangladesh that values secularism and minority rights. A useful indicator for this is the strength of the AL in the region. We use “AL share”, the proportion of national-level parliament seats in the region that is held by that party and conduct RIF regressions independently for both religious groups and for each year.

Given that Hindu minorities played a key role behind the AL victory in national elections in Bangladesh, we can ask whether Hindu wage advantage is merely a reflection of the effect of the AL’s presence. The estimated effect of “AL share” is presented in Fig. 5. AL share is associated with lower pay for Hindu workers, while higher pay for Muslim workers during the AL regime in 1999. However, the coefficient on AL share is mostly not significant. By 2005, AL share is correlated with better pay for both religious groups when BNP and its allies were in administration though the earning

advantage is always greater for Hindu workers and this pattern barely changes though much smaller in magnitude during the AL regime in 2009. This exercise suggests that additional control for political factors makes no difference to our basic findings.

[Fig. 6 about here]

#### **6.4 Economic transition**

In this sub-section we examine whether Hindu wage advantage is related to the development of the labour market. It is possible that Hindu minorities were better prepared for the changes in the economy through educational and occupational choices. We perform a wage decomposition across the wage distribution for two groups—old (born during 1970) and young workers (born during 1985). Men, born during 1970 were already established workers, 40 or more years old by 2009 but they would be nearly 20 years old during the most radical changes in economy in the early 1990s and enrolled in tertiary education. Thus, they should have better information about the requirements of the market economy while choosing their education and profession.<sup>24</sup> Those, born in 1985 and later, were less than 30 years old by 2009. On the other hand, because they were less than six years old in 1990, most of them had not yet started their education.

The estimated wage gaps between Muslim and Hindu workers for two age groups are presented in Fig. 6. In 1999, the wage gap between older workers is positive at the mean and at the 25<sup>th</sup> quantile but has been reversed at the upper end of the wage distribution. However, the opposite is observed in 2005. By 2009, the wage gap is in favour of Hindu workers across the wage distribution. This result appears to suggest that choice of education and profession of Hindu workers may be better correlated to the needs of market economy and; hence, contributed to the reverse wage gap between the older cohorts. Hindu younger workers are not better but rather worse off from 1999 to 2005. The reverse wage gap only appears at the 75<sup>th</sup> quantile in both years. However, the relative wages of young Hindu workers increased considerably and led to the reverse wage gap in 2009. In conclusion, our results of the two cohorts support the idea that the reverse wage gap of older cohorts to some extent is affected

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<sup>24</sup> It would be interesting to add cognitive skills of Muslim and Hindu workers or types of school attended by both religious groups. Unfortunately, such information is not available.



by economic reforms. In contrast, among younger cohorts, the reverse wage gap across the wage distribution seems relevant for the most recent year.

## 6.5 Concerns

We raise three concerns and describe what we do to alleviate them. These results are not reported for the sake of brevity but are available from the author upon request.

### 6.5.1 *Endogeneity*

One could argue that occupation variables should not be included as explanatory variables in the wage regression because of the possibility that occupation is endogenous. An additional reason for omitting these variables is that employers' discriminatory practices could be highly correlated with occupation. On the other hand, it is believed that these occupational controls might embody unmeasured occupation-specific human capital. Therefore, we might overlook the potential effect of unobserved human capital if we exclude such controls from the analysis. Arulampalam et al. (2007) argue that estimates with these controls can be viewed as a lower bound of the extent of discrimination. To address this issue, we undertake a decomposition exercise without controlling for occupation dummy variables. We find close similarity of the results to those presented in Table 4. This sensitivity test suggests that the decomposition results are not contaminated by any endogeneity bias, deriving from occupational choices.

### 6.5.2 *Identification bias*

The contributions of sets of categorical variables (for instance, age, education, occupation, industry, and region of residence) in explaining the overall *endowment effect* is subject to an identification problem, as they are sensitive to the base group used in the estimation. However, we cannot drop this part of the analysis because they contribute to the *endowment effect*. Moreover, we do not believe that this bias will be likely to have enough of an impact on our results that correcting it would alter our conclusions. To substantiate our claim further, we follow Ahmed and Maitra (2015) and do not omit any group from the wage regression; instead, the coefficients on dummy variables are expressed as their deviations from the mean. This way, the sum of the coefficients on a given set of

dummy variables is always equal to zero, and no identification problem arises because of the choice of the reference group. The results obtained are similar to those presented in the paper (Table 4).

### *6.5.3 Other dependent variable*

The measure for hourly wages may suffer dramatic inaccuracies if the assumption of weekly hours worked being consistent within a month is incorrect. To alleviate this concern, we carry out a sensitivity analysis by re-estimating Eqs (1) to (5) with log of weekly hourly wages computed by dividing weekly wages by the total hours of work per week. The unreported results are fairly robust to wages measured on monthly basis (reported in Table 4).

## **7. Conclusion**

We have analysed the wage gap between the two main religious groups, Muslims and Hindus, in the Bangladesh labour market during the economic and political transition period 1999–2009. We use the Bangladesh LFS datasets and restrict the sample to males only. We adopt the unconditional quantile regression model to examine (and decompose) the wage gap across the unconditional wage distribution.

The decomposition results indicate that, on average, Hindus fared comparatively well in the Bangladesh labour market, with a greater wage advantage at the upper end of the wage distribution in both 1999 and 2005. By 2009, the reverse wage gap increased substantially; Hindu workers were better off relative to their Muslim counterparts particularly at the lower income quantile. The main contributors to the reverse wage gap were improvement in their educational qualifications. Furthermore, the decomposition indicates that the discrimination against Hindus is evident throughout the wage distribution over the period 1999–2009. This reveals the fact that although the acquisition of human capital may be instrumental in giving Hindus competitive wages, they could still be being underpaid due to employers' personal tastes and preferences. However, the differences in productive characteristics narrowed substantially over the years that offset the negative forces, with the net effect being a decrease in the wage gap in favour of Hindus. These results are generally shown to be robust to alternative measure of wages and selection effects. Rather the paper demonstrates that, the reverse

wage gap is likely to be overestimated if the issue of selection into employment is ignored, especially in 2005. The main driving force behind this effect was the decline in discrimination against Hindu workers.

We also analyse a number of possible explanations for the reverse wage gap and exclude the role of the political environment. However, there is some evidence that migration, changes in the relevant legislation and economic reforms contributed to the reverse wage gap.

The evidence presented in this paper has significant policy implications. The paper shows that education is a key determinant of Hindu wage advantage in Bangladesh. This means that an equal access to education and training is required in order to generate a greater equality in earnings among religious groups. However, the study posits that even the highly educated Hindus are penalised by wage discrimination. This finding reinforces the need for a systematic affirmative action scheme on religious grounds in Bangladesh.

Table 1: Sample Selection

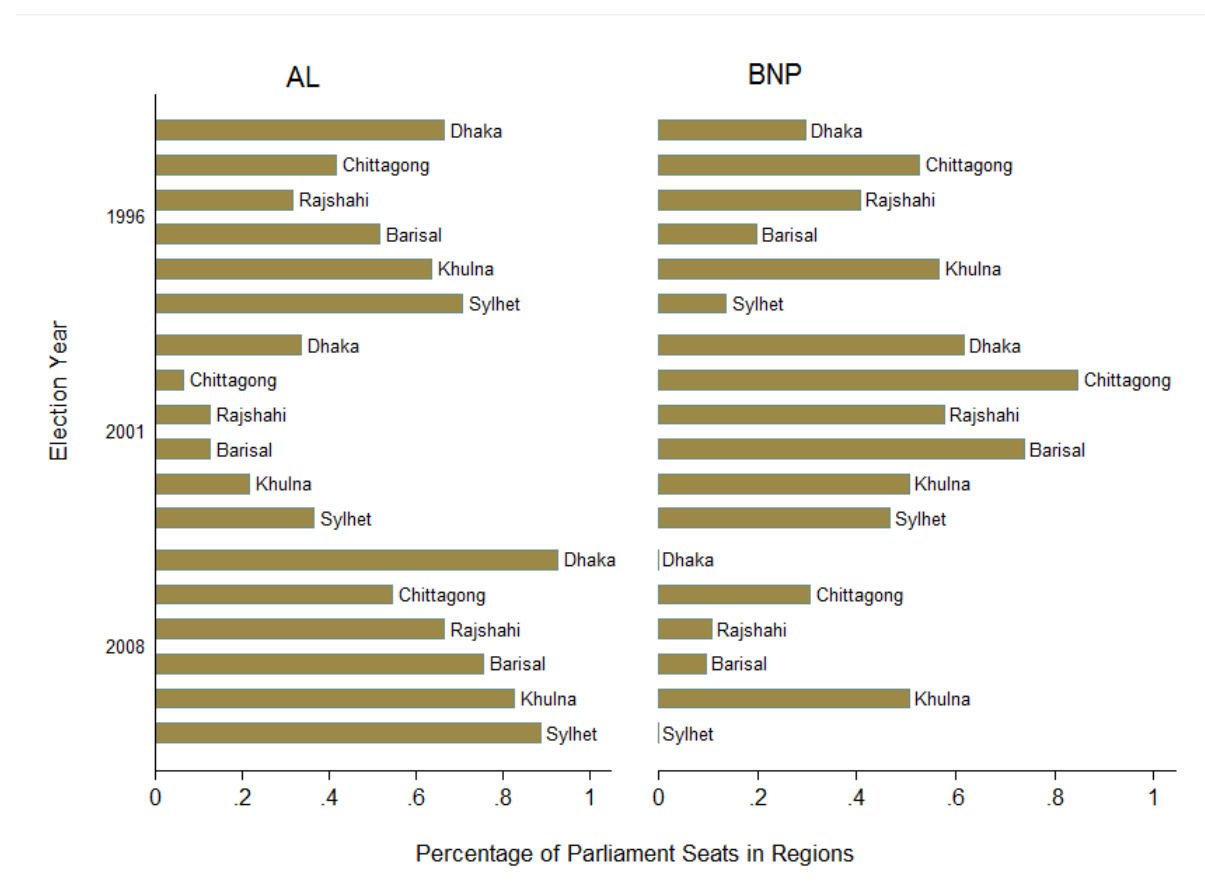
	1999			2005			2009		
	Muslim	Hindu	Total	Muslim	Hindu	Total	Muslim	Hindu	Total
Wage employees	2,274	223	2,497	6,365	839	7,204	6,923	881	7,804
Unemployed <sup>a</sup>	1,555	173	1,728	5,908	786	6,694	7,742	962	8,704
Non-participants <sup>b</sup>	430	36	466	1,631	130	1,761	2,365	302	2,667
Total	4,259	432	4,691	13,904	1,755	15,659	17,030	2,145	19,175

Notes: <sup>a</sup>Unemployed are those who are involuntarily out of gainful employment during the preceding week of the survey but either has been actively looking for a job or was willing to work but not looking for work because of illness or believing that no work was available.

<sup>b</sup> Non-participants are those who was not engaged in an economic activity.

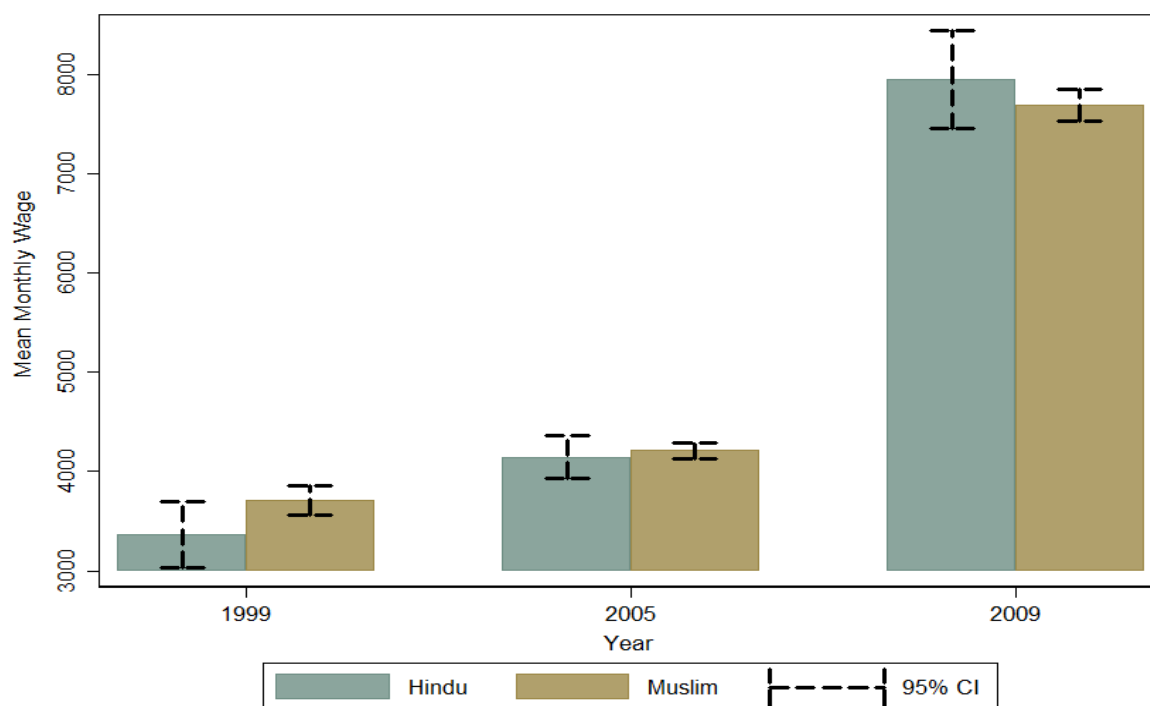
Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

Fig. 1. Percentage of Parliament Seats in Regions during General Election, by Major Political Parties



Source: Author's calculation from Bangladesh Election Commission Report for 1996, 2001 and 2008.

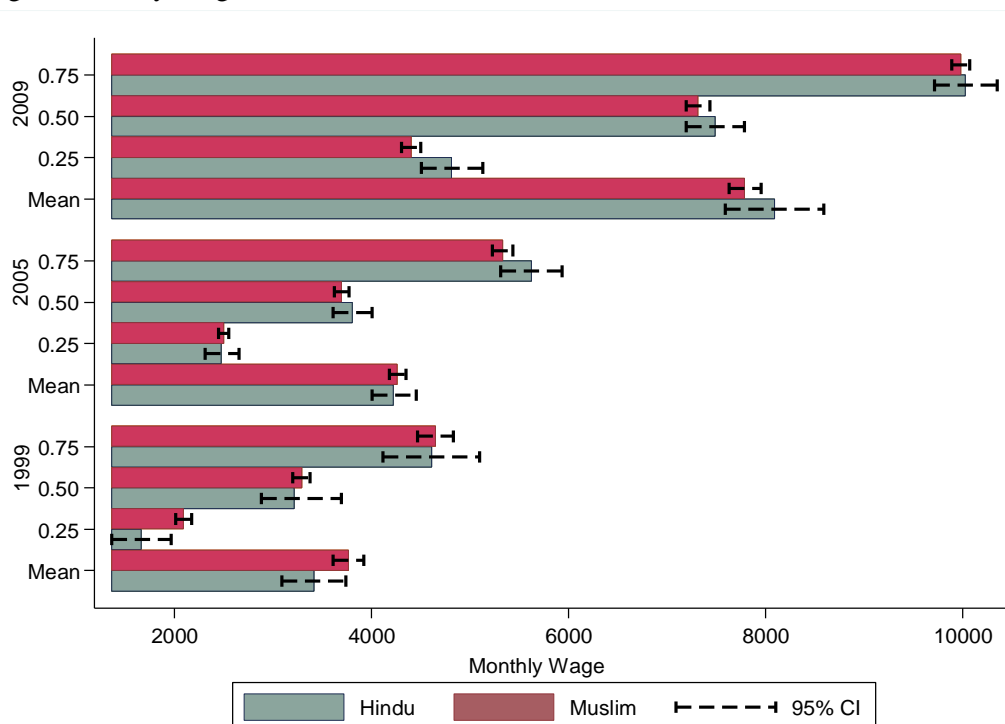
Fig. 2. Mean Monthly Wage of Muslim and Hindu Workers



Notes: Monthly wage are in 1999 Taka and weighted using the sample weights provided in the LFS data. The sample includes individuals in the age group of 15-65 years.

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

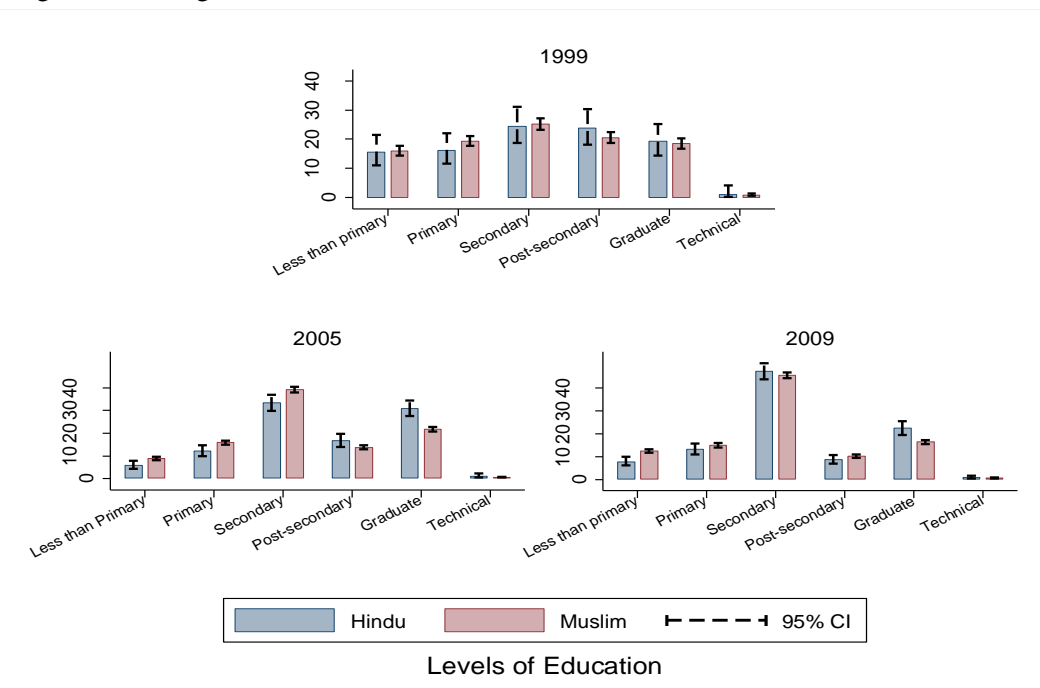
Fig. 3. Monthly Wage of Muslim and Hindu Workers across the Distribution



Notes: Monthly wage are in 1999 Taka and weighted using the sample weights provided in the LFS data. The sample includes individuals in the age group of 15-65 years.

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

Fig. 4. Percentage of Levels of Education of Muslim and Hindu Workers



Notes: Weighted estimates using the sample weights provided in the LFS data. The sample includes individuals in the age group of 15-65 years.

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

Table 2: Occupational Distribution of Muslim and Hindu Workers

	Professional	Administrative/ Managerial	Clerical	Service	Sales	Agricultural Labourer	Production Labourer	Other
<i>1999</i>								
Muslim	0.043	0.027	0.118	0.004	0.049	0.355	0.051	0.077
	(0.004)	(0.003)	(0.007)	(0.002)	(0.004)	(0.010)	(0.005)	(0.006)
Hindu	0.014	0.046	0.158	0.000	0.062	0.275	0.044	0.099
	(0.007)	(0.014)	(0.024)	(0.000)	(0.016)	(0.030)	(0.014)	(0.020)
	<b>0.029***</b>	<b>-0.019</b>	<b>-0.040</b>	<b>0.004</b>	<b>-0.013</b>	<b>0.080*</b>	<b>0.007</b>	<b>0.022</b>
<i>2005</i>								
Muslim	0.253	0.014	0.132	0.126	0.137	0.019	0.302	0.019
	(0.005)	(0.001)	(0.004)	(0.004)	(0.004)	(0.002)	(0.005)	(0.002)
Hindu	0.323	0.015	0.134	0.090	0.171	0.025	0.191	0.049
	(0.016)	(0.004)	(0.012)	(0.010)	(0.013)	(0.005)	(0.014)	(0.007)
	<b>-0.070***</b>	<b>-0.004</b>	<b>-0.002</b>	<b>0.036***</b>	<b>-0.034</b>	<b>-0.006</b>	<b>0.111***</b>	<b>-0.030***</b>
<i>2009</i>								
Muslim	0.022	0.210	0.096	0.050	0.115	0.106	0.328	0.070
	(0.002)	(0.005)	(0.004)	(0.003)	(0.004)	(0.003)	(0.005)	(0.003)
Hindu	0.013	0.262	0.089	0.031	0.180	0.084	0.278	0.061
	(0.004)	(0.015)	(0.009)	(0.006)	(0.013)	(0.009)	(0.015)	(0.008)
	<b>0.009</b>	<b>-0.051***</b>	<b>0.007</b>	<b>0.019**</b>	<b>-0.065***</b>	<b>0.022</b>	<b>0.050**</b>	<b>0.009</b>

Notes: Weighted mean using the sample weights provided in the LFS data. Standard errors in parentheses. The sample includes individuals in the age group of 15-65 years. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

Table 3: Percentage of Muslim and Hindu Workers, Employed in Major Industries

	Primary	Secondary	Tertiary
<i>1999</i>			
Muslim	0.347	0.064	0.313
	(0.009)	(0.005)	(0.010)
Hindu	0.268	0.069	0.363
	(0.029)	(0.017)	(0.032)
	<b>0.078*</b>	<b>-0.005</b>	<b>-0.050</b>
<i>2005</i>			
Muslim	0.016	0.005	0.558
	(0.002)	(0.001)	(0.006)
Hindu	0.025	0.004	0.479
	(0.005)	(0.002)	(0.017)
	<b>-0.009</b>	<b>0.001</b>	<b>0.079***</b>
<i>2009</i>			
Muslim	0.112	0.294	0.593
	(0.004)	(0.005)	(0.006)
Hindu	0.088	0.291	0.620
	(0.010)	(0.015)	(0.016)
	<b>0.024</b>	<b>0.003</b>	<b>-0.027</b>

Notes: Weighted mean using the sample weights provided in the LFS data.

Standard errors in parentheses. The sample includes individuals in the age group of 15-65 years.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

Table 4: Distributional Decomposition of the Wage Gap between Muslim and Hindu Workers

	1999				2005				2009			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
<b>Total wage gap</b>	<b>0.074</b>	<b>0.114</b>	<b>0.009</b>	<b>-0.014</b>	<b>-0.015</b>	<b>-0.001</b>	<b>-0.044</b>	<b>-0.025</b>	<b>-0.046</b>	<b>-0.090</b>	<b>-0.083</b>	<b>-0.058</b>
	(0.039)	(0.056)	(0.026)	(0.029)	(0.014)	(0.014)	(0.021)	(0.018)	(0.013)	(0.017)	(0.014)	(0.011)
<b>Endowment effects attributable to<sup>a</sup></b>												
Education	-0.075	-0.268	-0.097	0.097	-0.116	-0.157	-0.026	-0.391	-0.028	-0.102	0.019	-0.069
Occupation	0.021	0.052	0.006	0.061	0.077	0.125	-0.016	-1.226	0.049	0.067	0.111	0.078
Industry	-0.129	0.004	-0.004	-0.065	-0.019	0.019	-0.060	0.310	0.009	-0.055	0.047	-0.076
Endowment effects	0.016	0.078	-0.039	-0.052	-0.089	-0.043	-0.081	-0.107	-0.016	0.006	-0.014	-0.035
Approximation errors	-0.132	-0.111	-0.151	-0.181	-0.129	-0.148	-0.138	-0.119	-0.088	-0.123	-0.080	-0.064
<b>Subtotal 1</b>	<b>-0.116</b>	<b>-0.033</b>	<b>-0.190</b>	<b>-0.233</b>	<b>-0.218</b>	<b>-0.191</b>	<b>-0.219</b>	<b>-0.226</b>	<b>-0.104</b>	<b>-0.117</b>	<b>-0.094</b>	<b>-0.099</b>
	(0.011)	(0.013)	(0.013)	(0.014)	(0.005)	(0.007)	(0.006)	(0.005)	(0.046)	(0.006)	(0.005)	(0.005)
Discrimination effects	0.056	0.037	0.048	0.038	0.077	0.045	0.032	0.089	-0.030	-0.097	-0.068	-0.021
Approximation errors	0.134	0.110	0.151	0.181	0.126	0.145	0.143	0.112	0.088	0.124	0.079	0.062
<b>Subtotal 2</b>	<b>0.190</b>	<b>0.147</b>	<b>0.199</b>	<b>0.219</b>	<b>0.203</b>	<b>0.190</b>	<b>0.175</b>	<b>0.201</b>	<b>0.058</b>	<b>0.027</b>	<b>0.011</b>	<b>0.041</b>
	(0.045)	(0.061)	(0.049)	(0.049)	(0.019)	(0.026)	(0.022)	(0.023)	(0.014)	(0.018)	(0.010)	(0.011)

Notes: Wage rates are in 1999 Taka. Wage rates for Muslims are the reference category in the decomposition. A positive entry indicates an advantage in favour of Muslim workers. All decomposition results reported are rounded to three digits after the decimal. Subtotals 1 and 2 are computed as  $\left[ \left( \bar{X}_{mt} \hat{\beta}_{mt}(\tau) - \bar{X}_{ht} \hat{\beta}_{ct}(\tau) \right) + \hat{R}_E(\tau) \right] \left[ \bar{X}'_{ht} \left( \hat{\beta}_{ct}(\tau) - \hat{\beta}_{ht}(\tau) \right) + \hat{R}_C(\tau) \right]$ .

<sup>a</sup> The following explanatory variables are contributed to the endowment effect: age, education, number of children in the household, part-time, formal sector, occupation, industry, and location and region of residence. The results for age, marital status, number of children in the household, formal sector, part-time, and location and region of residence are suppressed for the sake of brevity.

Standard errors are in parentheses and are estimated based on 200 bootstrap replications.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.



Table 5: Distributional Decomposition of the Wage Gap between Muslim and Hindu Workers using the Imputed Sample

	1999				2005				2009			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
<b>Total wage gap</b>	<b>0.047*</b>	<b>0.061**</b>	<b>0.013</b>	<b>0.022</b>	<b>-0.054***</b>	<b>-0.037***</b>	<b>-0.036***</b>	<b>-0.072***</b>	<b>-0.037***</b>	<b>-0.029***</b>	<b>-0.032***</b>	<b>0.001</b>
	(0.027)	(0.025)	(0.029)	(0.030)	(0.017)	(0.012)	(0.016)	(0.019)	(0.007)	(0.007)	(0.010)	(0.006)
Endowment effects <sup>a</sup>	0.075	0.152	-0.024	-0.038	0.045	0.184	-0.049	-0.043	-0.020	0.133	0.030	0.084
Approximation errors	-0.025	-0.053	-0.009	0.003	0.092	0.086	0.091	0.081	0.009	-0.197	0.012	0.025
<b>Subtotal 1</b>	<b>0.050***</b>	<b>0.099***</b>	<b>-0.033***</b>	<b>-0.035***</b>	<b>0.137***</b>	<b>0.270***</b>	<b>0.042***</b>	<b>0.038***</b>	<b>-0.011***</b>	<b>-0.064***</b>	<b>0.042***</b>	<b>0.109***</b>
	(0.001)	(0.004)	(0.002)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Discrimination effects	-0.027	-0.090	0.037	0.060	-0.100	-0.222	0.011	-0.028	-0.018	0.054	-0.062	-0.084
Approximation errors	0.024	0.052	0.009	-0.003	-0.091	-0.085	-0.089	-0.082	-0.008	-0.019	-0.012	-0.024
<b>Subtotal 2</b>	<b>-0.003</b>	<b>-0.038</b>	<b>0.046</b>	<b>0.057*</b>	<b>-0.191***</b>	<b>-0.307***</b>	<b>-0.078***</b>	<b>-0.110***</b>	<b>-0.026***</b>	<b>0.035***</b>	<b>-0.074***</b>	<b>-0.108***</b>
	(0.026)	(0.024)	(0.030)	(0.031)	(0.016)	(0.013)	(0.014)	(0.017)	(0.006)	(0.008)	(0.010)	(0.006)

Notes: Wage rates are in 1999 Taka. Wage rates for Muslims are the reference category in the decomposition. A positive entry indicates an advantage in favour of Muslim workers. All decomposition results reported are rounded to three digits after the decimal. Subtotals 1 and 2 are computed as  $\left[ \left( \bar{X}_{mt} \hat{\beta}_{mt}(\tau) - \bar{X}_{ht} \hat{\beta}_{ct}(\tau) \right) + \hat{R}_E(\tau) \right] \left[ \bar{X}'_{ht} \left( \hat{\beta}_{ct}(\tau) - \hat{\beta}_{ht}(\tau) \right) + \hat{R}_C(\tau) \right]$ .

<sup>a</sup> The following explanatory variables are contributed to the endowment effect: age, education, number of children in the household, part-time, formal sector, occupation, industry, and location and region of residence and the results are suppressed for the sake of brevity.

Standard errors are in parentheses and are estimated based on 200 bootstrap replications.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

Table 6: Distributional Decomposition of the Wage Gap between Muslim and Hindu Workers in Low Migration Regions<sup>a</sup>

	1999				2005				2009			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
<b>Total wage gap</b>	<b>0.138**</b>	<b>0.131*</b>	<b>0.117</b>	<b>0.018</b>	<b>0.051**</b>	<b>0.131***</b>	<b>0.004</b>	<b>0.017</b>	<b>-0.102***</b>	<b>-0.154***</b>	<b>-0.103***</b>	<b>-0.113***</b>
	(0.054)	(0.072)	(0.072)	(0.043)	(0.024)	(0.034)	(0.019)	(0.018)	(0.016)	(0.025)	(0.017)	(0.012)
Endowment effects <sup>b</sup>	0.018	0.058	-0.011	-0.035	-0.014	0.023	-0.029	-0.030	-0.012	-0.043	-0.007	0.059
Approximation errors	-0.010	-0.021	0.001	0.004	-0.030	-0.049	-0.024	-0.018	-0.019	-0.046	-0.032	0.005
<b>Subtotal 1</b>	<b>0.008</b>	<b>0.037***</b>	<b>-0.010</b>	<b>-0.031***</b>	<b>-0.044***</b>	<b>-0.026***</b>	<b>-0.053***</b>	<b>-0.048***</b>	<b>-0.031***</b>	<b>-0.089***</b>	<b>-0.039***</b>	<b>0.064***</b>
	(0.006)	(0.009)	(0.007)	(0.008)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)	(0.002)	(0.003)
Discrimination effects	0.120	0.071	0.126	0.053	0.059	0.083	0.016	0.057	-0.090	-0.110	-0.096	-0.171
Approximation errors	0.010	0.023	0.001	-0.004	0.036	0.074	0.041	-0.008	0.019	0.045	0.032	-0.006
<b>Subtotal 2</b>	<b>0.130***</b>	<b>0.094</b>	<b>0.127*</b>	<b>0.049</b>	<b>0.095***</b>	<b>0.157***</b>	<b>0.057**</b>	<b>0.065***</b>	<b>-0.071***</b>	<b>-0.065**</b>	<b>-0.064***</b>	<b>-0.177***</b>
	(0.054)	(0.070)	(0.071)	(0.043)	(0.022)	(0.033)	(0.027)	(0.022)	(0.016)	(0.027)	(0.016)	(0.013)

Notes: Wage rates are in 1999 Taka. Wage rates for Muslims are the reference category in the decomposition. A positive entry indicates an advantage in favour of Muslim workers. All decomposition results reported are rounded to three digits after the decimal. Subtotals 1 and 2 are computed as  $\left[ \left( \bar{X}_{mt} \hat{\beta}_{mt}(\tau) - \bar{X}_{ht} \hat{\beta}_{ct}(\tau) \right) + \hat{R}_E(\tau) \right] \left[ \bar{X}'_{ht} \left( \hat{\beta}_{ct}(\tau) - \hat{\beta}_{ht}(\tau) \right) + \hat{R}_C(\tau) \right]$ .

<sup>a</sup> The low migration regions include Chittagong, Rajshahi, Sylhet and Khulna.

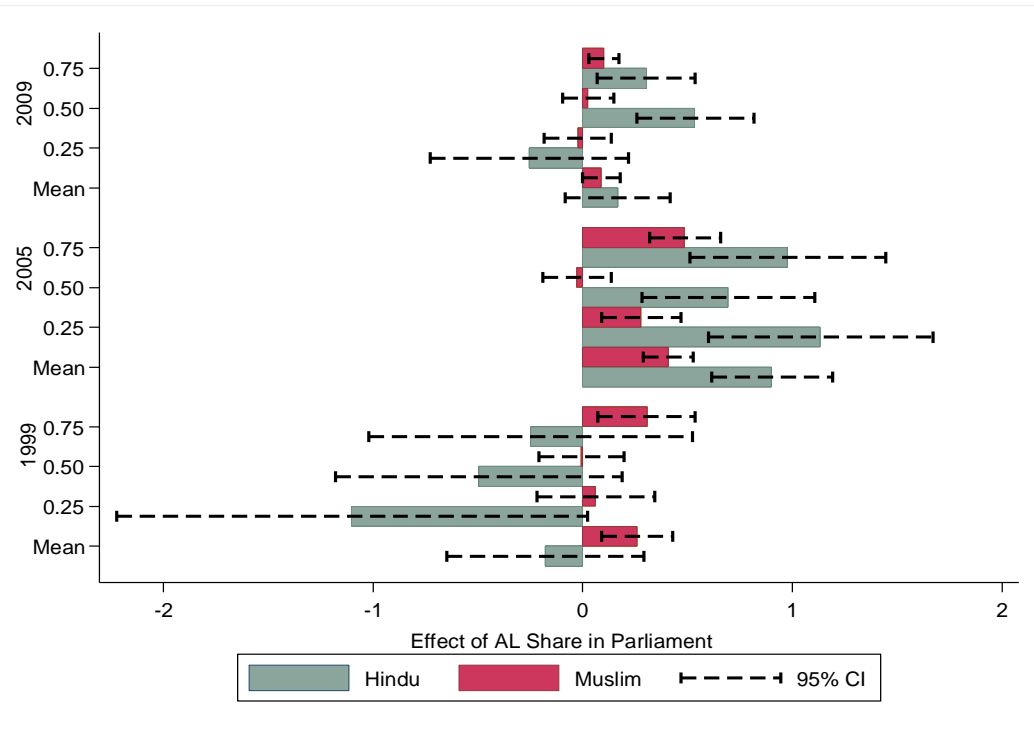
<sup>b</sup> The following explanatory variables are contributed to the endowment effect: age, education, number of children in the household, part-time, formal sector, occupation, industry, and location and the results are suppressed for the sake of brevity.

Standard errors are in parentheses and are estimated based on 200 bootstrap replications.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

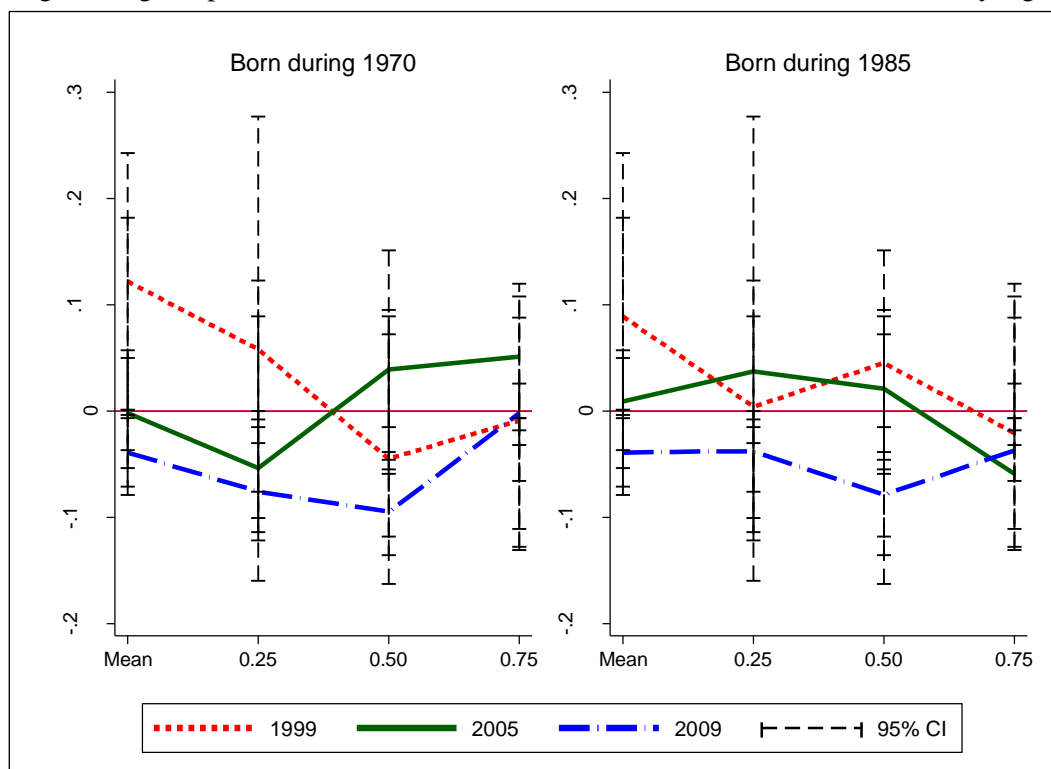
Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

Fig. 5. Effect of AL Share in Parliament Elections on Wages for Muslim and Hindu Workers



Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009 and Bangladesh Election Commission Report for 1996, 2001 and 2008.

Fig. 6. Wage Gaps across the Distribution between Muslim and Hindu Workers, by Age Groups



Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

## Appendix A: List of Variables

In Table A.1 we list and describe all the explanatory variables used in the analysis. A more in-depth discussion of the most critical variables is provided in sub-section 4.2

Table A.1: Definition of Variables

Variables	Definition of variables
<b><i>Age</i></b>	
Age 15-19	1 if age is between 15 and 19 years
Age 20-24	1 if age is between 20 and 24 years
Age 25-29	1 if age is between 25 and 29 years
Age 30-34	1 if age is between 30 and 34 years
Age 35-39	1 if age is between 35 and 39 years
Age 40-44	1 if age is between 40 and 44 years
Age 45-49	1 if age is between 45 and 49 years
Age 50-54	1 if age is between 50 and 54 years
Age 55-59	1 if age is between 55 and 59 years
Age 60-65	1 if age is between 60 and 65 years
<b><i>Education</i></b>	
less than a primary education	1 if individual has less than a primary education
Primary education completed	1 if individual completed Grade 5
Secondary education completed	1 if individual completed Grade 10/SSC <sup>a</sup>
Post-secondary education completed	1 if individual completed Grade 12/HSC <sup>b</sup>
Graduate	1 if individual attains at least a Bachelor's degree
Technical	1 if individual attains technical education <sup>c</sup>
Married	1 if individual is married
Muslim	1 if individual belongs to Muslim religion
<b><i>No. of children</i></b>	
No. of children, aged 0-5 in the household	No. of children between 0 and 5 years in the household
No. of children, aged 6-14 in the household	No. of children between 6 and 14 years in the household
No. of adults, aged 15 and higher in the household	No. of other adults aged 15 years or higher in the household
Head of the household	1 if individual is the head of the household
Formal sector	1 if individual works in formal sector
Part-time	1 if individual works less than 48 hours a week
<b><i>Occupation</i></b>	
Professional	1 if occupation category is professional
Administrative	1 if occupation category is administrative
Clerical	1 if occupation category is clerical
Service	1 if occupation category is service
Sales	1 if occupation category is sales
Agricultural labourer	1 if occupation category is agricultural
Production labourer	1 if occupation category is production
Other	1 if occupation category is others
<b><i>Industry</i></b>	
Primary industry	1 if industry category includes agriculture and fishing
Secondary industry	1 if industry category includes manufacturing, electricity and construction, mining and quarrying

Table A.1: Continued

Variables	Definition of variables
Tertiary industry	1 if industry category includes wholesale and retail trade, hospitality, transport, storage and communication services, financial, real estate, education and other services
Urban	1 if individual lives in urban areas
<b><i>Region</i></b>	
Barisal	1 if individual lives in Barisal
Chittagong	1 if individual lives in Chittagong
Dhaka	1 if individual lives in Dhaka
Khulna	1 if individual lives in Khulna
Rajshahi	1 if individual lives in Rajshahi
Sylhet	1 if individual lives in Sylhet

Notes: <sup>a</sup> SSC = Secondary School certificate. <sup>b</sup> HSC = Higher-Secondary School certificate. <sup>c</sup> Technical = It has been organised in three tiers: degree level education in engineering and technology, technician level education, and trade level training.

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

## Appendix B: Variable Averages

In Table B.1 we provided summary statistics of selected variables used in the analysis

Table B.1: Means of Explanatory Variables by religious groups and year

	1999				2005				2009			
	Muslim		Hindu		Muslim		Hindu		Muslim		Hindu	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age 15-19	0.107	0.309	0.136	0.344	0.087	0.282	0.059	0.236	0.109	0.311	0.086	0.280
Age 20-24	0.122	0.328	0.083	0.277	0.121	0.326	0.100	0.300	0.156	0.363	0.122	0.327
Age 25-29	0.119	0.324	0.123	0.330	0.141	0.348	0.135	0.342	0.138	0.345	0.133	0.340
Age 30-34	0.119	0.323	0.110	0.314	0.122	0.328	0.122	0.327	0.152	0.359	0.175	0.380
Age 35-39	0.135	0.341	0.117	0.322	0.128	0.335	0.157	0.364	0.106	0.307	0.131	0.338
Age 40-44	0.123	0.329	0.117	0.322	0.122	0.327	0.151	0.359	0.106	0.307	0.114	0.318
Age 45-49	0.122	0.327	0.138	0.346	0.110	0.313	0.100	0.300	0.091	0.288	0.083	0.275
Age 50-54	0.084	0.278	0.126	0.333	0.085	0.279	0.091	0.288	0.078	0.268	0.085	0.279
Age 55-59	0.050	0.218	0.021	0.144	0.053	0.225	0.062	0.242	0.044	0.204	0.049	0.215
Age 60-65*	0.020	0.139	0.027	0.163	0.029	0.167	0.023	0.149	0.021	0.142	0.022	0.148
Married	0.728	0.445	0.683	0.466	0.742	0.438	0.710	0.454	0.719	0.450	0.693	0.462
No. of children, aged 0-5 in the household	0.413	0.710	0.299	0.609	0.301	0.580	0.216	0.481	0.323	0.619	0.248	0.530
No. of children, aged 6-14 in the household	0.893	1.194	0.735	1.055	0.689	1.022	0.502	0.853	0.570	0.939	0.431	0.748
Formal sector	0.843	0.364	0.844	0.363	0.769	0.421	0.725	0.447	0.536	0.499	0.434	0.496
Part-time	0.295	0.456	0.267	0.443	0.234	0.423	0.260	0.439	0.214	0.410	0.225	0.418
Urban	0.745	0.436	0.649	0.478	0.584	0.493	0.637	0.481	0.370	0.483	0.436	0.496
Dhaka*	0.483	0.500	0.305	0.462	0.322	0.467	0.288	0.453	0.324	0.468	0.238	0.426
Barisal	0.039	0.193	0.073	0.260	0.093	0.290	0.085	0.279	0.108	0.311	0.093	0.291
Chittagong	0.166	0.372	0.143	0.351	0.194	0.396	0.212	0.409	0.236	0.424	0.236	0.425
Khulna	0.153	0.360	0.268	0.444	0.147	0.354	0.118	0.323	0.112	0.316	0.125	0.330
Rajshahi	0.142	0.349	0.125	0.332	0.210	0.407	0.175	0.380	0.149	0.356	0.064	0.245
Sylhet	0.017	0.130	0.086	0.281	0.033	0.180	0.121	0.327	0.070	0.255	0.244	0.430
Observations	2,274		223		6,365		839		6,923		881	

Notes: \*Implies reference categories in the estimated equations

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

## Appendix C: Coefficients

Here we list all the coefficients used in decomposing the wage gap in Table 4

Table C.1: OLS and unconditional quantile regression estimates of Muslim and Hindu workers, LFS 1999

	Panel A: Muslim				Panel B: Hindu			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
Age 15-19	-0.351*** (0.119)	-0.547*** (0.191)	-0.412*** (0.133)	0.052 (0.157)	-0.378* (0.195)	-0.304 (0.469)	-0.810** (0.363)	-0.616 (0.396)
Age 20-24	-0.106 (0.114)	-0.036 (0.184)	-0.357*** (0.131)	-0.003 (0.155)	-0.134 (0.206)	0.070 (0.509)	-0.809** (0.384)	-0.418 (0.392)
Age 25-29	-0.129 (0.110)	0.028 (0.169)	-0.261** (0.127)	-0.029 (0.153)	-0.397** (0.196)	-0.695 (0.424)	-0.588 (0.359)	-0.488 (0.373)
Age 30-34	0.019 (0.107)	0.208 (0.163)	-0.083 (0.125)	0.047 (0.151)	-0.224 (0.176)	-0.245 (0.394)	-0.694* (0.373)	-0.625* (0.349)
Age 35-39	0.083 (0.107)	0.321** (0.160)	0.031 (0.124)	0.118 (0.151)	-0.246 (0.172)	-0.423 (0.377)	-0.503 (0.367)	-0.336 (0.353)
Age 40-44	0.173 (0.107)	0.349** (0.160)	0.110 (0.125)	0.295* (0.153)	-0.201 (0.179)	-0.570 (0.405)	-0.361 (0.360)	-0.438 (0.356)
Age 45-49	0.193* (0.108)	0.253 (0.162)	0.192 (0.125)	0.390** (0.153)	0.085 (0.171)	-0.337 (0.389)	-0.115 (0.357)	0.052 (0.353)
Age 50-54	0.269** (0.113)	0.258 (0.164)	0.160 (0.127)	0.491*** (0.157)	-0.304 (0.188)	-0.786* (0.403)	-0.354 (0.363)	-0.233 (0.364)
Age 55-59	0.360*** (0.118)	0.358** (0.168)	0.233* (0.132)	0.511*** (0.165)	0.233 (0.224)	-0.135 (0.432)	0.133 (0.405)	1.303*** (0.453)
Primary education completed	0.144*** (0.044)	0.246*** (0.075)	0.061 (0.047)	0.045 (0.039)	0.103 (0.127)	0.623* (0.321)	0.171 (0.166)	-0.188 (0.148)
Secondary education completed	0.246*** (0.041)	0.423*** (0.072)	0.270*** (0.046)	0.100*** (0.038)	0.198* (0.118)	0.948*** (0.276)	0.073 (0.163)	-0.285* (0.148)
Post-secondary education completed	0.526*** (0.045)	0.627*** (0.071)	0.675*** (0.049)	0.605*** (0.054)	0.657*** (0.121)	1.264*** (0.279)	0.726*** (0.182)	0.305* (0.184)
Graduate	0.875*** (0.050)	0.702*** (0.071)	0.853*** (0.049)	1.161*** (0.059)	0.923*** (0.136)	1.388*** (0.291)	1.112*** (0.168)	0.760*** (0.210)
Technical	1.192*** (0.170)	0.741*** (0.126)	0.715*** (0.156)	1.297*** (0.251)	1.884*** (0.152)	1.487*** (0.344)	1.012*** (0.208)	1.315*** (0.342)
Married	0.161*** (0.047)	0.261*** (0.087)	0.112** (0.054)	0.097* (0.057)	0.210 (0.134)	0.642** (0.268)	0.130 (0.163)	-0.154 (0.179)
No. of children, aged 0-5 in the household	0.048*** (0.018)	0.067** (0.028)	0.032 (0.025)	-0.010 (0.027)	-0.070 (0.065)	-0.102 (0.115)	0.045 (0.101)	-0.065 (0.097)
No. of children, aged 6-14 in the household	0.020 (0.015)	0.042** (0.020)	0.015 (0.017)	0.040** (0.020)	0.052 (0.039)	0.083 (0.075)	0.046 (0.064)	0.025 (0.063)
Formal	0.211*** (0.040)	0.189*** (0.067)	0.194*** (0.042)	0.099** (0.041)	0.346*** (0.115)	0.692** (0.274)	0.431*** (0.158)	0.037 (0.166)

Table C.1: Continued

	Panel A: Muslim				Panel B: Hindu			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
Part-time	0.236*** (0.032)	0.130*** (0.041)	0.229*** (0.031)	0.369*** (0.040)	0.369*** (0.074)	0.209 (0.162)	0.319*** (0.108)	0.510*** (0.107)
Professional	-0.011 (0.066)	0.089 (0.087)	0.033 (0.074)	-0.103 (0.098)	0.058 (0.183)	0.152 (0.421)	0.380 (0.481)	-0.383 (0.383)
Administrative	-0.024 (0.096)	0.107 (0.109)	-0.116 (0.095)	-0.119 (0.102)	-0.000 (0.130)	-0.431 (0.324)	0.045 (0.214)	0.249 (0.305)
Clerical	-0.057 (0.052)	0.008 (0.070)	-0.037 (0.058)	-0.083 (0.067)	-0.260** (0.122)	-0.708** (0.283)	-0.202 (0.196)	-0.172 (0.223)
Service	0.042 (0.210)	0.113 (0.247)	-0.067 (0.217)	-0.202 (0.207)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Sales	-0.098 (0.067)	-0.185 (0.115)	-0.110 (0.076)	-0.068 (0.085)	-0.154 (0.144)	-0.318 (0.327)	-0.018 (0.254)	-0.105 (0.278)
Agricultural labourer	0.040 (0.031)	0.019 (0.052)	0.009 (0.035)	0.002 (0.040)	0.045 (0.098)	0.153 (0.203)	0.003 (0.157)	-0.043 (0.130)
Production labourer	0.107 (0.072)	0.036 (0.094)	0.083 (0.079)	0.016 (0.089)	0.034 (0.158)	0.012 (0.362)	-0.047 (0.314)	-0.151 (0.296)
Secondary industry	-0.057 (0.055)	-0.032 (0.091)	-0.044 (0.073)	-0.092 (0.070)	-0.048 (0.169)	0.329 (0.286)	-0.326 (0.301)	0.073 (0.238)
Tertiary industry	0.086** (0.044)	0.013 (0.063)	0.057 (0.047)	0.136** (0.054)	0.195 (0.118)	0.482* (0.246)	-0.120 (0.211)	0.410* (0.210)
Urban	0.120*** (0.028)	0.211*** (0.051)	0.105*** (0.035)	0.109*** (0.038)	0.269*** (0.078)	0.291 (0.188)	0.200* (0.120)	0.492*** (0.112)
Barisal	-0.135* (0.076)	-0.158 (0.107)	0.027 (0.080)	0.006 (0.082)	0.281* (0.147)	0.694*** (0.218)	0.413* (0.215)	0.340 (0.269)
Chittagong	-0.030 (0.034)	0.061 (0.056)	0.034 (0.041)	-0.064 (0.045)	0.142 (0.109)	0.381 (0.246)	0.247 (0.194)	0.204 (0.181)
Khulna	-0.013 (0.041)	-0.158*** (0.055)	-0.013 (0.040)	0.025 (0.050)	-0.112 (0.090)	-0.069 (0.194)	0.019 (0.141)	-0.155 (0.127)
Rajshahi	-0.110*** (0.036)	-0.098 (0.060)	-0.023 (0.043)	-0.109** (0.048)	-0.133 (0.091)	0.034 (0.237)	-0.044 (0.143)	-0.058 (0.156)
Sylhet	0.028 (0.062)	0.286** (0.125)	0.032 (0.105)	-0.015 (0.154)	-0.183 (0.148)	-0.591 (0.372)	-0.360** (0.172)	0.139 (0.154)
Constant	1.772*** (0.126)	1.097*** (0.200)	1.954*** (0.138)	2.214*** (0.162)	1.652*** (0.208)	0.191 (0.492)	2.081*** (0.387)	2.843*** (0.381)
Observations	2,274	2,274	2,274	2,274	223	223	223	223
R <sup>2</sup>	0.440	0.283	0.391	0.392	0.659	0.457	0.542	0.513

Notes: Robust standard errors are in parentheses. The result is rounded to three digits after the decimal. The results for counterfactual wage regression estimates  $\hat{\beta}_{ct}$  are not reported. However, counterfactual wage distributions assume that men's returns to labour market characteristics apply for women, and therefore  $\hat{\beta}_{ct}$  is comparable to  $\hat{\beta}_{mt}$ . A similar argument may apply to the wage gap between Muslims and Hindus.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Source: Author's calculation from the LFS dataset for 1999.



Table C.2: OLS and unconditional quantile regression estimates of Muslim and Hindu workers,  
LFS 2005

	Panel A: Muslim				Panel B: Hindu			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
Age 15-19	-0.350*** (0.055)	-0.714*** (0.096)	-0.375*** (0.071)	-0.098 (0.070)	-0.274 (0.167)	-0.661** (0.285)	-0.167 (0.235)	0.274 (0.203)
Age 20-24	-0.191*** (0.051)	-0.304*** (0.087)	-0.304*** (0.069)	-0.186*** (0.068)	-0.272* (0.142)	-0.507* (0.268)	-0.305 (0.234)	0.055 (0.196)
Age 25-29	-0.100** (0.048)	-0.067 (0.078)	-0.174*** (0.065)	-0.229*** (0.067)	-0.095 (0.134)	-0.167 (0.239)	-0.218 (0.228)	0.049 (0.188)
Age 30-34	-0.025 (0.048)	0.103 (0.074)	-0.062 (0.064)	-0.148** (0.068)	-0.021 (0.126)	0.014 (0.215)	-0.044 (0.223)	0.205 (0.189)
Age 35-39	0.061 (0.046)	0.128* (0.072)	0.022 (0.063)	-0.024 (0.068)	-0.009 (0.122)	-0.066 (0.209)	-0.107 (0.217)	0.241 (0.182)
Age 40-44	0.096** (0.047)	0.103 (0.073)	0.091 (0.063)	0.057 (0.070)	0.024 (0.125)	0.028 (0.205)	0.052 (0.218)	0.182 (0.186)
Age 45-49	0.166*** (0.048)	0.102 (0.073)	0.146** (0.063)	0.150** (0.070)	0.096 (0.124)	-0.052 (0.208)	0.069 (0.220)	0.319* (0.190)
Age 50-54	0.160*** (0.049)	0.087 (0.074)	0.124* (0.064)	0.156** (0.071)	0.222* (0.126)	-0.048 (0.211)	0.174 (0.220)	0.453** (0.190)
Age 55-59	0.188*** (0.053)	0.107 (0.077)	0.177*** (0.068)	0.236*** (0.078)	0.151 (0.129)	-0.022 (0.221)	0.132 (0.229)	0.436** (0.204)
Primary education completed	0.136*** (0.029)	0.285*** (0.057)	0.060 (0.037)	0.048* (0.025)	0.082 (0.089)	0.179 (0.201)	0.037 (0.100)	-0.054 (0.091)
Secondary education completed	0.311*** (0.026)	0.514*** (0.051)	0.308*** (0.035)	0.141*** (0.024)	0.261*** (0.081)	0.429** (0.173)	0.238** (0.095)	0.027 (0.086)
Post-secondary education completed	0.465*** (0.031)	0.688*** (0.055)	0.538*** (0.043)	0.400*** (0.039)	0.521*** (0.086)	0.893*** (0.181)	0.554*** (0.118)	0.305*** (0.113)
Graduate	0.714*** (0.032)	0.718*** (0.054)	0.686*** (0.042)	0.732*** (0.040)	0.730*** (0.090)	0.856*** (0.184)	0.757*** (0.117)	0.637*** (0.117)
Technical	0.761*** (0.089)	0.736*** (0.114)	0.743*** (0.106)	0.726*** (0.135)	0.999*** (0.114)	0.992*** (0.204)	1.158*** (0.130)	1.007*** (0.372)
Married	0.097*** (0.024)	0.096** (0.045)	0.045 (0.035)	0.075** (0.031)	0.081 (0.062)	0.186 (0.125)	0.046 (0.086)	0.013 (0.091)
No. of children, aged 0-5 in the household	0.016 (0.012)	0.029 (0.019)	0.014 (0.018)	0.005 (0.019)	0.021 (0.034)	-0.025 (0.063)	0.074 (0.045)	0.075 (0.059)
No. of children, aged 6-14 in the household	0.009 (0.009)	0.027** (0.013)	0.012 (0.012)	-0.008 (0.013)	0.045* (0.024)	0.115*** (0.039)	-0.022 (0.033)	0.063 (0.038)
Formal	0.228*** (0.018)	0.346*** (0.034)	0.265*** (0.024)	0.133*** (0.020)	0.190*** (0.042)	0.308*** (0.099)	0.215*** (0.064)	0.083 (0.061)

Table C.2: Continued

	Panel A: Muslim				Panel B: Hindu			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
Part-time	0.356*** (0.018)	0.128*** (0.023)	0.292*** (0.023)	0.510*** (0.028)	0.332*** (0.043)	0.146** (0.068)	0.266*** (0.058)	0.575*** (0.073)
Professional	0.245*** (0.050)	0.311*** (0.096)	0.221*** (0.071)	0.199*** (0.052)	0.143 (0.116)	0.236 (0.204)	0.081 (0.151)	0.394*** (0.120)
Administrative	0.334*** (0.080)	0.352*** (0.129)	0.340*** (0.105)	0.374*** (0.114)	0.181 (0.157)	0.350 (0.297)	0.106 (0.253)	0.455 (0.288)
Clerical	0.364*** (0.051)	0.312*** (0.097)	0.306*** (0.071)	0.512*** (0.056)	0.238* (0.122)	0.254 (0.211)	0.237 (0.157)	0.641*** (0.127)
Service	0.201*** (0.051)	0.253** (0.098)	0.209*** (0.070)	0.217*** (0.050)	0.067 (0.134)	-0.041 (0.218)	-0.107 (0.159)	0.375*** (0.118)
Sales	0.125** (0.050)	0.155 (0.099)	0.183*** (0.071)	0.112** (0.050)	0.014 (0.117)	0.063 (0.211)	-0.068 (0.150)	0.316*** (0.116)
Agricultural labourer	0.168** (0.086)	0.144 (0.145)	0.144 (0.102)	0.336*** (0.087)	0.106 (0.216)	0.255 (0.495)	0.404 (0.310)	0.240** (0.114)
Production labourer	0.201*** (0.049)	0.331*** (0.096)	0.119* (0.068)	0.105** (0.047)	0.039 (0.116)	0.149 (0.217)	-0.114 (0.151)	0.287** (0.115)
Secondary industry	-0.142 (0.099)	-0.270 (0.196)	-0.161 (0.123)	-0.036 (0.112)	-0.561* (0.308)	-0.854** (0.420)	-0.882*** (0.260)	-0.043 (0.107)
Tertiary industry	0.033** (0.016)	-0.021 (0.024)	-0.052** (0.022)	0.069*** (0.023)	-0.029 (0.045)	-0.095 (0.074)	-0.212*** (0.059)	-0.022 (0.068)
Urban	0.142*** (0.014)	0.033 (0.024)	0.146*** (0.020)	0.213*** (0.019)	0.130*** (0.039)	0.085 (0.073)	0.089 (0.055)	0.231*** (0.058)
Barisal	-0.032 (0.024)	0.041 (0.039)	0.043 (0.036)	-0.123*** (0.036)	-0.232*** (0.070)	-0.228* (0.123)	-0.197* (0.110)	-0.424*** (0.096)
Chittagong	-0.007 (0.020)	0.035 (0.031)	0.125*** (0.027)	-0.040 (0.028)	-0.171*** (0.046)	-0.285*** (0.090)	-0.085 (0.066)	-0.151** (0.072)
Khulna	-0.074*** (0.021)	-0.076** (0.034)	0.025 (0.029)	-0.017 (0.029)	-0.238*** (0.061)	-0.314*** (0.102)	-0.062 (0.079)	-0.294*** (0.086)
Rajshahi	-0.206*** (0.019)	-0.193*** (0.031)	-0.121*** (0.025)	-0.186*** (0.026)	-0.233*** (0.053)	-0.278*** (0.096)	-0.072 (0.074)	-0.297*** (0.085)
Sylhet	0.194*** (0.031)	0.244*** (0.043)	0.198*** (0.047)	0.153*** (0.055)	0.145** (0.070)	0.065 (0.110)	0.307*** (0.078)	0.114 (0.111)
Constant	1.803*** (0.072)	1.233*** (0.131)	1.918*** (0.094)	2.391*** (0.081)	2.022*** (0.172)	1.435*** (0.308)	2.272*** (0.255)	2.140*** (0.225)
Observations	5,802	5,802	5,802	5,802	773	773	773	773
R <sup>2</sup>	0.489	0.273	0.355	0.385	0.580	0.382	0.468	0.424

Notes: Robust standard errors are in parentheses. The result is rounded to three digits after the decimal. The results for counterfactual wage regression estimates  $\hat{\beta}_{ct}$  are not reported. However, counterfactual wage distributions assume that men's returns to labour market characteristics apply for women, and therefore  $\hat{\beta}_{ct}$  is comparable to  $\hat{\beta}_{mt}$ . A similar argument may apply to the wage gap between Muslims and Hindus.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Source: Author's calculation from the LFS dataset for 2005.

Table C.3: OLS and Unconditional Quantile Regression Estimates of Muslim and Hindu workers, LFS 2009

	Panel A: Muslim				Panel B: Hindu			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
Age 15-19	-0.171*** (0.052)	-0.339*** (0.094)	-0.120 (0.074)	-0.067 (0.045)	-0.137 (0.137)	-0.427 (0.279)	0.027 (0.155)	0.248* (0.138)
Age 20-24	-0.113** (0.048)	-0.266*** (0.086)	-0.084 (0.070)	-0.070* (0.043)	-0.126 (0.130)	-0.514** (0.259)	-0.001 (0.149)	0.201 (0.135)
Age 25-29	0.019 (0.046)	-0.044 (0.082)	0.037 (0.068)	-0.021 (0.042)	0.131 (0.124)	-0.014 (0.237)	0.114 (0.141)	0.262* (0.134)
Age 30-34	0.101** (0.046)	0.107 (0.080)	0.149** (0.067)	0.017 (0.041)	0.017 (0.115)	-0.031 (0.227)	-0.012 (0.138)	0.080 (0.129)
Age 35-39	0.121*** (0.046)	0.131 (0.081)	0.193*** (0.069)	0.022 (0.042)	-0.017 (0.120)	-0.101 (0.232)	0.014 (0.140)	0.073 (0.133)
Age 40-44	0.142*** (0.046)	0.171** (0.080)	0.186*** (0.068)	0.002 (0.043)	0.085 (0.119)	-0.036 (0.234)	0.036 (0.140)	0.126 (0.133)
Age 45-49	0.111** (0.047)	0.102 (0.081)	0.180*** (0.069)	0.030 (0.043)	0.119 (0.128)	-0.041 (0.238)	0.129 (0.147)	0.285** (0.140)
Age 50-54	0.169*** (0.047)	0.109 (0.081)	0.224*** (0.069)	0.091** (0.043)	0.149 (0.125)	0.061 (0.238)	0.138 (0.147)	0.246* (0.139)
Age 55-59	0.202*** (0.053)	0.069 (0.088)	0.263*** (0.074)	0.121*** (0.046)	0.076 (0.135)	-0.091 (0.257)	0.198 (0.157)	0.219 (0.153)
Primary education completed	-0.005 (0.026)	0.046 (0.051)	-0.067** (0.033)	-0.020 (0.019)	-0.049 (0.078)	-0.310* (0.175)	-0.176* (0.092)	0.063 (0.063)
Secondary education completed	0.087*** (0.022)	0.203*** (0.042)	-0.012 (0.029)	-0.024 (0.017)	0.068 (0.067)	0.028 (0.142)	-0.133 (0.082)	0.133** (0.059)
Post-secondary education completed	0.224*** (0.029)	0.408*** (0.052)	0.147*** (0.042)	0.082*** (0.026)	0.311*** (0.092)	0.380** (0.172)	0.165 (0.114)	0.191** (0.094)
Graduate	0.463*** (0.030)	0.518*** (0.047)	0.365*** (0.039)	0.255*** (0.025)	0.500*** (0.084)	0.484*** (0.158)	0.319*** (0.099)	0.465*** (0.083)
Technical	0.412*** (0.074)	0.584*** (0.098)	0.462*** (0.105)	0.229*** (0.089)	0.812*** (0.262)	0.817*** (0.177)	0.304 (0.232)	0.523** (0.248)
Married	0.028 (0.023)	0.009 (0.042)	-0.013 (0.031)	0.003 (0.018)	0.142** (0.060)	0.192* (0.115)	0.125* (0.072)	0.187*** (0.063)
No. of children, aged 0-5 in the household	-0.028** (0.012)	-0.038* (0.020)	-0.045*** (0.017)	-0.021** (0.010)	0.089** (0.036)	0.112* (0.061)	0.135*** (0.042)	0.048 (0.041)
No. of children, aged 6-14 in the household	-0.019** (0.009)	-0.002 (0.015)	-0.019 (0.012)	-0.014* (0.008)	0.012 (0.028)	0.058 (0.047)	0.017 (0.035)	-0.005 (0.031)
Formal	0.165*** (0.014)	0.251*** (0.025)	0.213*** (0.019)	0.127*** (0.011)	0.012 (0.040)	-0.036 (0.072)	-0.043 (0.045)	0.002 (0.040)

Table C.3: Continued

	Panel A: Muslim				Panel B: Hindu			
	Mean	0.25	0.50	0.75	Mean	0.25	0.50	0.75
Part-time	0.259*** (0.017)	0.227*** (0.026)	0.194*** (0.024)	0.209*** (0.016)	0.164*** (0.055)	0.071 (0.081)	0.180*** (0.055)	0.296*** (0.054)
Professional	0.471*** (0.058)	0.366*** (0.069)	0.373*** (0.061)	0.309*** (0.041)	0.601*** (0.217)	0.147 (0.201)	0.325* (0.174)	0.488** (0.200)
Administrative	0.137*** (0.032)	0.262*** (0.055)	0.174*** (0.043)	0.128*** (0.025)	0.110 (0.091)	-0.026 (0.152)	0.059 (0.108)	0.136 (0.100)
Clerical	0.225*** (0.033)	0.342*** (0.056)	0.309*** (0.046)	0.172*** (0.028)	0.151 (0.103)	-0.045 (0.169)	0.169 (0.119)	0.242** (0.111)
Service	0.013 (0.039)	0.133* (0.071)	0.004 (0.054)	-0.013 (0.028)	-0.293* (0.152)	-0.563* (0.289)	-0.415*** (0.157)	-0.070 (0.129)
Sales	0.020 (0.034)	0.048 (0.063)	-0.067 (0.045)	0.025 (0.024)	-0.111 (0.094)	-0.242 (0.172)	-0.215** (0.107)	-0.018 (0.091)
Agricultural labourer	0.313*** (0.091)	0.494*** (0.132)	0.660*** (0.122)	0.437*** (0.081)	-0.214 (0.217)	-0.635* (0.365)	0.170 (0.344)	-0.277 (0.277)
Production labourer	0.003 (0.032)	0.072 (0.059)	-0.071 (0.043)	0.004 (0.023)	0.003 (0.087)	-0.123 (0.162)	-0.027 (0.106)	0.115 (0.088)
Secondary industry	-0.086 (0.088)	-0.146 (0.126)	-0.005 (0.118)	-0.059 (0.078)	-0.495** (0.221)	-0.946** (0.377)	-0.178 (0.341)	-0.274 (0.274)
Tertiary industry	-0.109 (0.087)	-0.151 (0.122)	-0.010 (0.116)	-0.085 (0.077)	-0.483** (0.221)	-0.999*** (0.373)	-0.154 (0.340)	-0.203 (0.275)
Urban	0.024* (0.014)	-0.050* (0.026)	0.026 (0.020)	0.039*** (0.012)	-0.013 (0.041)	-0.093 (0.077)	-0.079* (0.047)	0.036 (0.040)
Barisal	0.037 (0.023)	0.168*** (0.039)	0.132*** (0.033)	-0.021 (0.020)	-0.074 (0.079)	0.042 (0.137)	0.043 (0.093)	-0.013 (0.081)
Chittagong	-0.050*** (0.019)	-0.010 (0.034)	-0.023 (0.025)	-0.044*** (0.015)	0.007 (0.055)	0.213** (0.108)	-0.089 (0.060)	0.035 (0.046)
Khulna	-0.124*** (0.022)	-0.076* (0.039)	-0.046 (0.030)	-0.057*** (0.018)	-0.084 (0.070)	0.054 (0.130)	0.042 (0.075)	0.049 (0.067)
Rajshahi	-0.073*** (0.020)	-0.015 (0.036)	-0.004 (0.028)	-0.048*** (0.017)	0.028 (0.084)	0.195 (0.155)	0.085 (0.104)	0.002 (0.075)
Sylhet	-0.097*** (0.029)	-0.068 (0.051)	-0.021 (0.041)	-0.043* (0.026)	0.197*** (0.063)	0.320*** (0.112)	0.319*** (0.066)	0.347*** (0.058)
Constant	3.097*** (0.103)	2.548*** (0.158)	3.081*** (0.138)	3.669*** (0.090)	3.481*** (0.265)	3.808*** (0.469)	3.453*** (0.388)	3.320*** (0.323)
Observations	6,923	6,923	6,923	6,923	881	881	881	881
R <sup>2</sup>	0.287	0.168	0.226	0.240	0.333	0.205	0.298	0.293

Notes: Robust standard errors are in parentheses. The result is rounded to three digits after the decimal. The results for counterfactual wage regression estimates  $\hat{\beta}_{ct}$  are not reported. However, counterfactual wage distributions assume that men's returns to labour market characteristics apply for women, and therefore  $\hat{\beta}_{ct}$  is comparable to  $\hat{\beta}_{mt}$ . A similar argument may apply to the wage gap between Muslims and Hindus.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Source: Author's calculation from the LFS dataset for 2009.

## Appendix D: Robustness Checks and Further Analysis

Here we present some additional results

Table D.1: Growth of Hindu Population by Regions and Percentage of Muslim and Hindu Wage Employees in High and Low Migration Regions

	1991 Population Census		2001 Population Census		% Change	
Panel A: Hindu Population						
Dhaka		2694008		2755146		2.27 <sup>a</sup>
Chittagong		1755562		1891912		7.77
Rajshahi		2748517		2888941		5.11
Barisal		1122092		1229258		9.55
Khulna		866039		816051		-5.77 <sup>a</sup>
Sylhet		1952642		2059036		5.45
		1999		2005		2009
Panel B: Wage Employees	Muslim	Hindu	Muslim	Hindu	Muslim	Hindu
High migration regions	53.39	39.91	42.66	38.02	44.92	32.92
Low migration regions	46.61	60.09	57.34	61.98	55.08	67.08
Total	2274	223	6365	839	6923	881

Notes: <sup>a</sup>High migration regions

Source: Author's calculation from the LFS datasets for 1999, 2005 and 2009.

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